LEMOORE

CALIFORNIA

LEMOORE CITY COUNCIL
COUNCIL CHAMBER
429 C STREET
May 3, 2022

## MEETING AGENDA

***Please silence all electronic devices as a courtesy to those in attendance. Thank you.***

### 5:30 pm STUDY SESSION

SS-1 Kings County Elections – Voter's Choice Act (Avalos)

### CLOSED SESSION

This item has been set aside for the City Council to meet in a closed session to discuss matters pursuant to Government Code Section 54956.9(d)(4). The City Attorney will provide an oral report regarding the Closed Session at the beginning of the next regular City Council meeting.

1. Government Code Section 54956.9
   Conference with Legal Counsel – Anticipated Litigation
   Initiation of Litigation Pursuant to Paragraph (4) of Subdivision (d) of Section 54956.9 (Deciding Whether to Initiate Litigation)
   One Case
2. Government Code Section 54956.9
   Conference with Legal Counsel – Exposure to Litigation
   Significant Exposure to Litigation Pursuant to Paragraph (2) or (3) of Subdivision (d) of Section 54956.9
   One Case
3. Government Code Section 54956.9(d)(1)
   Conference with Legal Counsel - Existing Litigation
   In Re: Sean M. Martin vs. Lemoore Police Department
   Kings County Superior Court Case No.: 22CV0181
4. Government Code Section 54957.6
   Conference with Labor Negotiator
   Agency Designated Representatives: Mary Lerner, City Attorney and Michelle Speer, Assistant City Manager
   Employee Organizations: General Association of Service Employees

### ADJOURNMENT

## 7:30 p.m. REGULAR SESSION

a. CALL TO ORDER
b. INVOCATION
c. PLEDGE OF ALLEGIANCE
d. ROLL CALL
f. AGENDA APPROVAL, ADDITIONS, AND/OR DELETIONS
e. CLOSED SESSION REPORT

## PUBLIC COMMENT

**Public comment will be in accordance with the attached policy.** This time is reserved for members of the audience to address the City Council on items of interest that are not on the Agenda and are within the subject matter jurisdiction of the Council. It is recommended that speakers limit their comments to three (3) minutes each and it is requested that no comments be made during this period on items on the Agenda. The Council is prohibited by law from taking any action on matters discussed that are not on the Agenda. Prior to addressing the Council, any handouts for Council will be provided to the City Clerk for distribution to the Council and appropriate staff. The public will have an opportunity to comment on items on the agenda once the item has been called and the Mayor opens the item to the public.

## CEREMONIAL / PRESENTATION – Section 1

No Ceremonies or Presentations.

## DEPARTMENT AND CITY MANAGER REPORTS – Section 2

2-1 Department & City Manager Reports

## CONSENT CALENDAR – Section 3

Items considered routine in nature are placed on the Consent Calendar. They will all be considered and voted upon in one vote as one item unless a Council member or member of the public requests individual consideration.

3-1 Approval – Minutes – Regular Meeting – April 19, 2022
3-2 Approval – Budget Amendment for Public Works Professional Contract Services
3-3 Approval – Budget Amendment for PFMD Zone 5
3-4 Approval – Budget Amendment and Bid Award for Project 5013 – Bush Street Overlay – Terra West Construction

## PUBLIC HEARINGS – Section 4

Report, discussion and/or other Council action will be taken.

4-1 Public Hearing – Project Development Agreement and Cannabis Regulatory Permit between the City of Lemoore and Pacific Plant Sciences, INC. For Cannabis Operations (Olson)
4-2 Public Hearing – Resolution 2022-17 – Certifying the Environmental Impact Report, Resolution 2022-18 – Initiating a Sphere of Influence Amendment and Annexation 2020-01 and approving General Plan Amendment 20202-03, First Readings – Ordinances 2022-05 and 2022-06 – Approving Zoning Map Amendment (Pre-Zoning) No. 2020-03, and adopting Planned Unit Development No. 2020-02, Resolution 2022-19 – Approving Tentative Subdivision Map Tract 932 and Major Site Plan Review No. 2020-02 in Accordance with the Findings and Conditions (Brandt)
4-3 Public Hearing – Resolution 2022-20 – Approving General Plan Amendment No. 2022-01 (Brandt)

## NEW BUSINESS – Section 5

Report, discussion and/or other Council action will be taken.

No New Business.

## BRIEF CITY COUNCIL REPORTS AND REQUESTS – Section 6

6-1 City Council Reports / Requests

## ADJOURNMENT

**Upcoming Council Meetings**

- City Council Regular Meeting, Tuesday, May 17, 2022
- City Council Regular Meeting, Tuesday, June 7, 2022

Agendas for all City Council meetings are posted at least 72 hours prior to the meeting at the Council Chamber, 429 C Street and the Cinnamon Municipal Complex, 711 W. Cinnamon Drive. Written communications from the public for the agenda must be received by the City Clerk's Office no less than seven (7) days prior to the meeting date. The City of Lemoore complies with the Americans with Disabilities Act (ADA of 1990). The Council Chamber is accessible to the physically disabled. Should you need special assistance, please call (559) 924-6744, at least 4 business days prior to the meeting.

## PUBLIC NOTIFICATION

I, Marisa Avalos, City Clerk for the City of Lemoore, declare under penalty of perjury that I posted the above Regular City Council Agenda for the meeting of May 3, 2022 at Council Chamber, 429 C Street and Cinnamon Municipal Complex, 711 W. Cinnamon Drive, Lemoore, CA on April 28, 2022.

//s//

Marisa Avalos, City Clerk

**CITY OF LEMOORE**
**CITY COUNCIL REGULAR MEETING**
**May 3, 2022 @ 5:30 p.m. / 7:30 p.m.**

All upcoming regular and special City Council meetings ***will be open to members of the public on a first come, first served basis and via Zoom.*** The meeting may be viewed through the following options:

- Join Zoom Meeting
- Please click the link below to join the webinar:
- https://us06web.zoom.us/j/82177515204?pwd=eFAvUlJtbGUwdkczc1hmaHFtL3NsQT09
- Meeting ID: 821 7751 5204
- Passcode: 640421
- Phone: +1 669 900 6833

The City will also provide links to streaming options on the City's website and on its Facebook page.

If you wish to make a general public comment or public comment on a particular item on the agenda, **participants are encouraged to attend in person or virtually via Zoom** or by **submitting by e-mail to**: cityclerk@lemoore.com. In the subject line of the e-mail, please state your name and the item you are commenting on. If you wish to submit a public comment on more than one agenda item, please send a separate e-email for each item you are commenting on. Please be aware that written public comments, including your name, may become public information. Additional requirements for submitting public comments by e-mail are provided below:

**General Public Comments & Comments on City Council Business Items**
Public Comments must be received by e-mail no later than 4:00 p.m. the day of the meeting. Comments received by this time will be read aloud by a staff member during the applicable agenda item, provided that such comments may be read within the normal three (3) minutes allotted to each speaker. Any portion of your comment extending past three (3) minutes may not be read aloud due to time restrictions. If a general public comment or comment on a business item is received after 4:00 p.m., efforts will be made to read your comment into the record. However, staff cannot guarantee that written comments received after 4:00 p.m. will be read. All written comments that are not read into the record will be made part of the meeting minutes, provided that such comments are received prior to the end of the City Council meeting.

**Public Hearings**
For public comment on a public hearing, all public comments must be received by the close of the public hearing period. All comments received by the close of the public hearing period will be read aloud by a staff member during the applicable agenda item, provided that such comments may be read within the normal three (3) minutes allotted to each speaker. Any portion of your comment extending past three (3) minutes may not be read aloud due to time restrictions. If a comment on a public hearing item is received after the close of the public hearing, such comment will be made part of the meeting minutes, provided that such comment is received prior to the end of the meeting.

City of
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711 West Cinnamon Drive ● Lemoore, California 93245 ● (559) 924-6744

# Staff Report

**Item No: SS-1**

**To:** **Lemoore City Council**

**From:** **Marisa Avalos, City Clerk / Executive Assistant**

**Date:** **April 12, 2022** **Meeting Date:** **May 3, 2022**

**Subject:** **Kings County Elections – Voter's Choice Act**

**Strategic Initiative:**

| | |
|---|---|
| ☐ Safe & Vibrant Community | ☐ Growing & Dynamic Economy |
| ☐ Fiscally Sound Government | ☒ Operational Excellence |
| ☐ Community & Neighborhood Livability | ☐ Not Applicable |

**Proposed Motion:**
Information Only.

**Subject/Discussion:**
Kings County Elections Department has adopted a new election model called "Voter's Choice Act" (VCA) which will allow voters in Kings County additional days and ways to vote. Kings County will start employing the VCA election model with the upcoming June 7, 2022, Statewide Direct Primary Election. Lupe Villa, Registrar of Voters with Kings County will be present to give a presentation.

**Financial Consideration(s)**:
Not Applicable.

**Alternatives or Pros/Cons:**
Not Applicable.

**Commission/Board Recommendation:**
Not Applicable.

**Staff Recommendation:**
Information Only.

| Attachments: | Review: | Date: |
|---|---|---|
| ☐ Resolution: | ☒ Asst. City Manager | 04/25/2022 |
| ☐ Ordinance: | ☒ City Attorney | 04/28/2022 |
| ☐ Map | ☒ City Clerk | 04/28/2022 |
| ☐ Contract | ☒ City Manager | 04/28/2022 |
| ☐ Other<br>List: | ☒ Finance | 04/27/2022 |

# COUNTY OF KINGS
# ELECTIONS DEPARTMENT

1-800-289-9981 ext. 4401 / 559-852-4401
FAX: (559) 585-8453

**Lupe Villa**
Registrar of Voters
1400 W. Lacey Blvd. Bldg. #7
Hanford, California 93230
Elections@CountyofKings.com


## JUNE 7, 2022 STATEWIDE DIRECT PRIMARY ELECTION
## 7 DE JUNIO DE 2022 ELECCIONES PRIMARIAS DIRECTAS EN TODO EL ESTADO

## VOTING LOCATIONS
## LUGARES DE VOTACIÓN

| | NAME OF LOCATION<br>NOMBRE DE LA UBICACIÓN | PHYSICAL ADDRESS OF POLL<br>DIRECCIÓN FÍSICA DE LA LUGARES DE VOTACIÓN | CITY<br>CIUDAD | # of Days Open<br># de días abiertos |
|---|---|---|---|---|
| 1 | KINGS COUNTY GOVERNMENT CENTER | 1400 W. LACEY BLVD. | HANFORD | 11 |
| 2 | KINGS COUNTY OFFICE OF EDUCATION – LEMOORE SERVICE CENTER | 876 E. D ST. | LEMOORE | 11 |
| 3 | AVENAL RECREATION CENTER | 717 E. MONTEREY ST. | AVENAL | 4 |
| 4 | RECREATION ASSOCIATION OF CORCORAN GYMNASIUM | 900 DAIRY AVE. | CORCORAN | 4 |
| 5 | LONGFIELD CENTER | 560 S. DOUTY ST. | HANFORD | 4 |
| 6 | SIERRA PACIFIC HIGH SCHOOL GYMNASIUM | 1259 N. 13TH AVE. | HANFORD | 4 |
| 7 | LEMOORE CIVIC AUDITORIUM | 435 C ST. | LEMOORE | 4 |

Voting locations will operate:
11 Day - Saturday, May 28th through Monday, June 6th from 9:00 am to 5:00 pm
Tuesday, June 7th from 7:00 am to 8:00 pm
4 Day- Saturday June 4th through Monday June 6th from 9:00 am to 5:00 pm
Tuesday, June 7th from 7:00 am to 8:00 pm

Los lugares de votación operarán:
11 Día - Sábado 28 de mayo al lunes 6 de junio de 9:00 am a 5:00 pm
Martes 7 de junio de 7:00 am a 8:00 pm
4 Día- Sábado 4 de junio al lunes 6 de junio de 9:00 am a 5:00 pm
Martes 7 de junio de 7:00 am a 8:00 pm

COUNTY OF KINGS
ELECTIONS DEPARTMENT
1-800-289-9981 ext. 4401 / 559-852-4401
FAX: (559) 585-8453

Lupe Villa
Registrar of Voters
1400 W. Lacey Blvd. Bldg. #7
Hanford, California 93230
Elections@CountyofKings.com

# JUNE 7, 2022 STATEWIDE DIRECT PRIMARY ELECTION
# 7 DE JUNIO DE 2022 ELECCIONES PRIMARIAS DIRECTAS EN TODO EL ESTADO

## OFFICIAL BALLOT DROP BOX LOCATIONS
## LAS UBICACIONES DE LOS BUZONES DE BOLETAS

| | |
|---|---|
| ARMONA | COMMISSION ON AGING/ SENIOR CENTER - 10953 14TH AVE. |
| AVENAL | AVENAL BRANCH LIBRARY - 501 E. KINGS ST. |
| CORCORAN | CORCORAN AREA TRANSIT/ AMTRAK STATION - 1099 OTIS AVE. |
| HANFORD | KINGS COUNTY GOVERNMENT CENTER - 1400 W. LACEY BLVD.<br>KINGS COUNTY ELECTIONS OFFICE – 1400 W. LACEY BLVD.<br>HOME GARDEN COMMUNITY SERVICE DISTRICT - 11677 2ND PL.<br>HANFORD HIGH SCHOOL 120 E. GRANGEVILLE BLVD. |
| LEMOORE | LEMOORE PARKS AND REC. DEPARTMENT - 721 W. CINNAMON DR.<br>CENTRAL UNION ELEMENTARY SCHOOL - 15783 18TH AVE.<br>LEMOORE MASONIC LODGE – 647 W. BUSH ST. |
| KETTLEMAN CITY | KETTLEMAN CITY BRANCH LIBRARY – 104 BECKY PEASE ST. |

The 24/7 Drop Box locations will be available
starting May 9th through June 7th at 8:00 pm

Las ubicaciones de Drop Box 24/7 estarán disponibles
del 9 de mayo al 7 de junio a las 8:00 pm

Item 3-1

# April 19, 2022 Minutes
## Lemoore City Council Meeting
## Regular Meeting

CALL TO ORDER:

*At 7:30 p.m., the meeting was called to order.*

| | | |
|---|---|---|
| ROLL CALL: | Mayor: | LYONS |
| | Mayor Pro Tem: | MATTHEWS |
| | Council Members: | CHANEY, ORTH |
| | Absent: | GORNICK |

City Staff and contract employees present: City Manager Olson; City Attorney Lerner; Police Chief Kendall; Public Works Director Rivera; Management Analyst Baley; Management Analyst Reeder; City Planner Brandt; City Clerk Avalos.

AGENDA APPROVAL, ADDITIONS, AND/OR DELETIONS

*No agenda approvals, additions or deletions.*

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PUBLIC COMMENT

*Michelle Weiser invited the Council to the State Qualifier Race at BMX track on Saturday, April 23rd. Riders and families from throughout the state will be attending. Expecting around 500 riders. This is the first big event of the year. She provided flyers for the event.*

*Susie Banuelos thanked Mayor Pro Tem Matthews and Council Member Orth for visiting the track and showing support. The Pizza Festival is also going on this weekend. They will be encouraging the riders to check out the Pizza Festival. This amazing sport is open to anyone.*

*David Brown thanked City staff and Public works for getting the water tank by West Hills back up. It is very important.*

CEREMONIAL / PRESENTATION – Section 1

*No Ceremonies or Presentations.*

DEPARTMENT AND CITY MANAGER REPORTS – Section 2

*Public Works Director Rivera provided an update on the water tank project. Paint is being continued. There is still 3-4 weeks of painting left. Aspen Court is being paved. Water division has been busy replacing broken water meters.*

*Police Chief Kendall reminded everyone of the Officer Diaz Overpass Dedication being held on April 22nd and the Peace Officer Memorial Ceremony is on May 18th.*

*City Manager Olson stated that he had a conversation with the Department of Drinking Water. Planning to be testing with our new water system within the next 90 days. Working through the final details.*

CONSENT CALENDAR – Section 3

3-1 Approval – Minutes – Regular Meeting – April 5, 2022
3-2 Approval – Minutes – Special Meeting – April 5, 2022
3-3 Approval – Second Reading – Ordinance 2022-02 – Adopting a Military Equipment Use Policy Pursuant to Assembly Bill 481
3-4 Approval – Second Reading – Ordnance 2022-03 and 2022-04 – Prezoning No. 2021-03, and Planning Unit Development No. 2021-01 for Tract 935
3-5 Approval – Budget Amendment and Agreement between the County of Kings and the City of Lemoore to Provide a Sub Award for FY 2019 State Homeland Security Grant Programs Funding
3-6 Approval – Subdivision Agreement and Final Map – Tract 820 – Energy Homes, Inc. dba G.J Gardner Homes
★ 3-7 Approval – Budget Amendment – Purchase of APNs: 024-080-074 (8.60 Acres) and APN 024-080-076 (10.55 Acres)
3-8 Approval – Notice of Completion – CIP 5313 – Bush Street Sewer Repair Project
3-9 Approval – Change Order for AdEdge for Electrical Work on City Wells
3-10 Approval – Notice of Completion – CIP 5019 – 2021 Annual Road Maintenance Project

*Motion by Mayor Pro Tem Matthews, seconded by Council Member Orth, to approve the Consent Calendar, as presented.*

*Ayes: Matthews, Orth, Chaney, Lyons*
*Absent: Gornick*

PUBLIC HEARINGS – Section 4

*No Public Hearings.*

NEW BUSINESS – Section 5

5-1 Report and Recommendation – Audit Report for Year Ended June 30, 2021 (Speer)

*Motion by Mayor Pro Tem Matthews, seconded by Council Member Orth, to table the recommendation of the Ad Hoc Committee to a later date.*

*Ayes: Matthews, Orth, Chaney, Lyons*
*Absent: Gornick*

BRIEF CITY COUNCIL REPORTS AND REQUESTS – Section 6

6-1 City Council Reports / Requests

*Mayor Lyons thanked Paster John for the invocation and those who provided a public comment this evening. He also thanked Mainteance and Sheila Taylor for the Downtown Easter event.*

*Mayor Pro Tem Matthews attended the 'Every 15 Minutes' event at Lemoore High School. It was a very powerful event and very good production. She thanked Fire, Police, CHP, American Ambulance and all those who participated in the event. She thanked the City for fixing the water issue downtown. She attended the CalCities General Membership and Downtown Easter Celebration. Upcoming Events: Bike Night at the Fleet Reserve on April 20th, KCAO Food Distribution on April 21st, Pizza Festival on 22-24th, BMX Races on April 23rd.*

*Council Member Chaney stated that Central Valley Blood Bank will be hosting a Blood Drive at Living Waters Church on April 30th. He thanked Fire, Police and all City employees. They make Lemoore what it is.*

*Council Member Orth stated that Sheila did an awesome job on the Easter celebration. It was well attended. He thanked the Maintenance division for their work in front of the Council Chambers. He thanked all City staff for their hard work. He stated that Council will have a booth at the Pizza Festival.*

ADJOURNMENT

*At 8:00 p.m., Council adjourned.*

*Approved the 3rd day of May 2022.*

APPROVED:

______________________________
Stuart Lyons, Mayor

ATTEST:

______________________________
Marisa Avalos, City Clerk

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# Staff Report

**Item No: 3-2**

**To:** **Lemoore City Council**

**From:** **Frank Rivera, Public Works Director**

**Date:** **April 25, 2022** **Meeting Date:** **May 3, 2022**

**Subject:** **Budget Amendment for Public Works Professional Contract Services**

**Strategic Initiative:**

| | |
|---|---|
| ☐ Safe & Vibrant Community | ☐ Growing & Dynamic Economy |
| ☐ Fiscally Sound Government | ☐ Operational Excellence |
| ☒ Community & Neighborhood Livability | ☐ Not Applicable |

## Proposed Motion:

Approve budget amendment in the amount of $70,000 for Public Works Professional Contract Services and authorize the City Manager, or designee, to sign the budget amendment.

## Subject/Discussion:

Public Works conducts plan reviews for all private development and new subdivisions coming into the city. Due to the increase in development, our budgeted amount for Professional Contract Services is insufficient. With this budget amendment, the City will be able to continue reviewing plans to bring in new subdivisions and developments. Expenditures from this budget amendment will be reimbursed through fees charged by the City to developers for plan checks.

## Financial Consideration (s):

This budget amendment is funded out of the General Fund Reserve (Fund 001), and will utilize funds that will be reimbursed through plan review fees.

## Alternatives or Pros/Cons:

Alternative: Council could reject the change order, which would stop all development until FY 23.

**Commission/Board Recommendation:**
N/A

**Staff Recommendation:**
Approve budget amendment in the amount of $70,000 for Public Works Professional Contract Services and authorize the City Manager, or designee, to sign the budget amendment.

| **Attachments:** | **Review:** | **Date:** |
|---|---|---|
| ☐ Resolution: | ☒ Asst. City Manager | 04/25/2022 |
| ☐ Ordinance: | ☒ City Attorney | 04/28/2022 |
| ☐ Map | ☒ City Clerk | 04/28/2022 |
| ☐ Contract | ☒ City Manager | 04/27/2022 |
| ☒ Other | ☒ Finance | 04/27/2022 |
| List: Budget Amendment | | |

# CITY OF LEMOORE
BUDGET AMENDMENT FORM

| | | | |
|---|---|---|---|
| Date: | 4/25/2022 | Request By: | Randon Reeder |
| Requesting Department: | Public Works | | |

## TYPE OF BUDGET AMENDMENT REQUEST:

☐ Appropriation Transfer within Budget Unit

☑ All other appropriations (Attach Council approved Staff Report)

## FROM:

| Fund | Budget Unit | Account | Current Budget | Proposed Increase/Decrease: | Proposed New Budget |
|---|---|---|---|---|---|
| 001 | | 1010 | | $ (70,000.00) | $ (70,000.00) |
| | | | | | $ - |
| | | | | | $ - |
| | | | | | $ - |

## TO:

| Fund | Budget Unit | Account | Current Budget | Proposed Increase/Decrease: | Proposed New Budget |
|---|---|---|---|---|---|
| 001 | 4230 | 4310 | $ 120,660.00 | $ 70,000.00 | $ 190,660.00 |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | $ - |
| | | | | | $ - |

## JUSTIFICATION FOR CHANGE/FUNDING SOURCE:

Allocating funds from general fund reserves to cover expenses for engineering in Public Works.

## APPROVALS:

| | |
|---|---|
| Department Head: | Date: |
| City Manager: | Date: |
| Completed By: | Date: |

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# Staff Report

**Item No: 3-3**

**To:** **Lemoore City Council**

**From:** **Frank Rivera, Public Works Director**

**Date:** **April 25, 2022** **Meeting Date:** **May 3, 2022**

**Subject:** **Budget Amendment for PFMD Zone 5**

**Strategic Initiative:**

| | |
|---|---|
| ☐ Safe & Vibrant Community | ☐ Growing & Dynamic Economy |
| ☐ Fiscally Sound Government | ☐ Operational Excellence |
| ☒ Community & Neighborhood Livability | ☐ Not Applicable |

**Proposed Motion:**

Approve budget amendment in the amount of $5,000 and authorize the City Manager, or designee, to sign the budget amendment.

**Subject/Discussion:**

Public Facilities Maintenance District (PFMD) Zone 5 covers East Village Park and Aniston Place. This area has approximately 61,882 square feet of landscaping. This area was hit with utility charges that caused unexpected expenditures that the original budgeted amount is unable to cover. Pulling from reserves for PFMD 5 will guarantee that all utility service and maintenance will be continued without any gaps in service.

**Financial Consideration (s):**

This budget amendment is funded out of the PFMD Zone 5 Fund (Fund 255), and is utilizing current reserve funds. Currently PFMD Zone 5 has a reserve balance of $461,878 and will have $459,878 after the attached budget amendment.

**Alternatives or Pros/Cons:**

Alternative: Council could reject the change order, which would cause all utility service to be shut off in this area for the remainder of the fiscal year.

**Commission/Board Recommendation:**

N/A

**Staff Recommendation:**
Approve budget amendment in the amount of $5,000, and authorize the City Manager, or designee, to sign the budget amendment.

| **Attachments:** | **Review:** | **Date:** |
|---|---|---|
| ☐ Resolution: | ☒ Asst. City Manager | 04/25/2022 |
| ☐ Ordinance: | ☒ City Attorney | 04/28/2022 |
| ☐ Map | ☒ City Clerk | 04/28/2022 |
| ☐ Contract | ☒ City Manager | 04/27/2022 |
| ☒ Other | ☒ Finance | 04/27/2022 |
| List: Budget Amendment | | |

# CITY OF LEMOORE
BUDGET AMENDMENT FORM

| | |
|---|---|
| Date: 4/25/2022 | Request By: Randon Reeder |
| Requesting Department: PFMD Zone 5 | |

## TYPE OF BUDGET AMENDMENT REQUEST:

☑ Appropriation Transfer within Budget Unit

☐ All other appropriations (Attach Council approved Staff Report)

## FROM:

| Fund | Budget Unit | Account | Current Budget | Proposed Increase/Decrease: | Proposed New Budget |
|---|---|---|---|---|---|
| 255 | 4875 | 1010 | Reserves | $ (5,000.00) | $ (5,000.00) |
| - | - | | | | $ - |
| - | - | | | | $ - |
| - | - | | | | $ - |
| - | - | | | | $ - |

## TO:

| Fund | Budget Unit | Account | Current Budget | Proposed Increase/Decrease: | Proposed New Budget |
|---|---|---|---|---|---|
| 255 | 4875 | 4340 | $ 14,700.00 | $ 5,000.00 | $ 19,700.00 |
| | | | | | |
| - | - | | | | $ - |
| - | - | | | | $ - |
| - | - | | | | $ - |
| | | | | | $ - |

## JUSTIFICATION FOR CHANGE/FUNDING SOURCE:

Reallocating funds to cover expenses for utility service.

## APPROVALS:

| | |
|---|---|
| Department Head: | Date: |
| City Manager: | Date: |
| Completed By: | Date: |

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# Staff Report

**Item No: 3-4**

**To:** **Lemoore City Council**

**From:** **Frank Rivera, Public Works Director**

**Date:** **March 29, 2022** **Meeting Date:** **May 3, 2022**

**Subject:** **Budget Amendment and Bid Award for Project 5013 - Bush Street Overlay -- Terra West Construction**

**Strategic Initiative:**

| | |
|---|---|
| ☐ Safe & Vibrant Community | ☐ Growing & Dynamic Economy |
| ☐ Fiscally Sound Government | ☐ Operational Excellence |
| ☒ Community & Neighborhood Livability | ☐ Not Applicable |

**Proposed Motion:**

Authorize a budget amendment in the amount of $240,000 from Fund 027 (TE/STP), increasing the total project budget to $1,150,000 and award the Bush Street Overlay to Terra West Construction in the amount of $849,867 and allocate an additional 10% for project contingency and authorize the City Manager, or designee, to execute the agreement.

**Subject/Discussion:**

HIP (Highway Infrastructure Program), assists municipalities with projects regarding transportation. The goal is to specifically fund the restoration, repair, construction, of federal aid eligible roads, bridges and tunnels.

This project is to perform rehabilitation to Bush Street, which runs east to west, through the city of Lemoore. This project includes an overlay of Bush Street between 19$^{th}$ and 19 ½ Avenue. The project was advertised December 10, 2021 and bids were opened on January 11, 2022. The lowest bid received was from Terra West Construction in the amount of $849,867. The engineer’s estimate was $1,239,092.36.

Other bids received are as follows:

Cal Valley Construction: $934,996.55
Agee Construction Corporation: $945,916.00
Bush Engineering, Inc.: $947,461.00
Avison Construction, Inc.: $956,061.00
Don Berry Construction: $1,027,123.10
AJ Excavation, Inc.: $1,069,588.00
Papich Construction Inc.: $1,232,192.12

**Financial Consideration (s):,**
Project 5013 – Bush Street Overlay was approved in the FY 2022 annual budget in the amount of $910,000. This project is funded utilizing HIP funds and gas tax funds. These funds are located in the City budget as fund 033 and fund 027. The budget amendment will provide the additional funding necessary for project construction, project management, and anticipated contingency.

**Alternatives or Pros/Cons:**
Pros:
- Repair local roads.

Cons:
- None Noted
- Sub-par road conditions for residents

**Commission/Board Recommendation:**
N/A

**Staff Recommendation:**
Staff recommends City Council authorize the budget amendment and award the Bush Street Overlay to Terra West Construction in the amount of $849,867 and allocate an additional 10% for project contingency and authorize the City Manager, or designee, to execute the agreement.

| Attachments: | Review: | Date: |
|---|---|---|
| ☐ Resolution: | ☒ Asst. City Manager | 04/11/2022 |
| ☐ Ordinance: | ☒ City Attorney | 04/28/2022 |
| ☐ Map | ☒ City Clerk | 04/28/2022 |
| ☒ Contract | ☒ City Manager | 04/27/2022 |
| ☒ Other | ☒ Finance | 04/12/2022 |

List: Bid Proposal
Recommendation
Agreement
Budget Amendment

# BID PROPOSAL TO THE
# CITY COUNCIL
# CITY OF LEMOORE
# KINGS COUNTY, CALIFORNIA
# FOR
# BUSH STREET OVERLAY PROJECT

BID OF Terra West Construction Inc. (hereinafter called "Bidder")
organized and existing under the laws of the State of California, doing business as
Corporation.*

* *Insert "a corporation," "a partnership," or "an individual" as applicable.*

TO: The City Council, City of Lemoore
(Hereinafter called "City")

The undersigned, as bidder, declares that he has carefully examined the location of the proposed work, that he has thoroughly examined all the Contract Documents and Plans, and that this bid is made without collusion with any other person, firm, or corporation, and that all laws and ordinances relating to the interest of public officers in the contract have been complied with in every respect; AND he proposes and agrees, if this bid is accepted, that he will contract with the City in the form of contract contained herein to provide all necessary machinery, tools, equipment, and other means of construction, and to furnish all materials and provide superintendence, overhead expenses, and all labor and expenses of whatever nature to construct the work in accordance with the Plans and the detailed Specifications and other contract provisions contained herein or reasonably implied thereby, or as necessary to complete the work in the manner and within the time named herein and according to the requirements and to the reasonable satisfaction of the Engineer, and to indemnify the City against any loss or damage arising from any act of the undersigned as Contractor and that he will take as full payment therefore the sum stated below.

Bidder hereby agrees to commence work under this contract on or before the date specified in the written *Notice to Proceed* from the City, and to fully complete the project within the time allotted in the Special Provisions. Bidder further agrees to forfeit and pay the City for each calendar day of delay in the completion of the project as provided for in the Special Provisions.

The undersigned understands that the quantities given are approximate only, being given as a basis for the comparison of bids, and the City of Lemoore does not, expressly or by implication, warrant that the given quantities of work will be performed but reserves the right to increase or decrease the amounts of any portion of the work, or to omit portions of the work as may deemed necessary or advisable by the Engineer, without claim for damage or loss of anticipated profit. The undersigned understands that payment will be made only on the basis of the actual quantities or work performed.

This Bid Proposal Form consists of the following:

a. Bid Form showing unit prices and the amount bid for each item of work.

b. Bidder's List of Subcontractors.

c. Exhibit 12-B Bidder's List of Subcontractor (DBE and Non-DBE) Part 1

d. Exhibit 12-B Bidder's List of Subcontractor (DBE and Non-DBE) Part 2

e. Major Materials Suppliers Information.

f. Equal Employment Opportunity Certificate.

g. Public Contract Code Section 10285.1 Statement.

h. Public Contract Code Section 10162 Statement.

i. Public Contract Code Section 10232 Statement.

j. Debarment and Suspension Certification

k. Nonlobbying Certification for Federal-Aid Contracts

l. Exhibit 10-Q, Disclosure of Lobbying Activities

m. Exhibit 15-G, Construction Contract DBE Commitment

n. Exhibit 15-H, Proposer/Contractor Good Faith Efforts

o. Noncollusion Affidavit.

p. Drug-free Workplace Certification.

q. Information required of bidders.

r. Completed Statement of Licensure.

s. Certification of Compliance with State Labor Code 3700.

t. Bid Certification Page.

u. Bid Bond – Bid security in the amount of ten percent (10%) of the total amount bid in accordance with the stated requirements contained in the General Conditions.

Bidder's failure to properly complete the entire Bid Proposal Form may result in the bid being considered nonresponsive.

# B I D FORM

## TO THE CITY OF LEMOORE:

The undersigned declares that he has carefully examined the location of the proposed work, that he has carefully examined the Plans and Specifications and hereby proposes to furnish all materials and do all the work required to complete the said work in accordance with said Plans and Specifications, for the prices as listed below:

### BUSH STREET OVERLAY PROJECT

| ITEM | QUANTITY | UNIT | ITEM WITH UNIT PRICE WRITTEN IN WORDS | PRICE | TOTAL |
|---|---|---|---|---|---|
| 1. | L.S. | L.S. | Mobilization and Demobilization @ Forty thousand _ Dollars Per Lump Sum Amount. | 40,000.00/L.S. | 40,000.00 |
| 2. | L.S. | L.S. | Prepare and Maintain Pedestrian and Traffic Control Plan(s) @ Fifty-six thousand & five hundred _Dollars Per Lump Sum Amount | 56,500.00/L.S. | 56,500.00 |
| 3. | L.S. | L.S. | Prepare, Implement and Maintain Storm Water Pollution Control Program @ One thousand five hundred _ Dollars Per Lump Sum Amount. | 1,500.00 /L.S. | w1,500.00 |
| 4. | L.S. | L.S. | Clearing, Grubbing & Demolition @ Thirty thousand _ Dollars Per Lump Sum Amount. | 30,000.00 /L.S. | 30,000.00 |
| 5. | L.S. | L.S. | Earthwork, Grading, and Compaction @ Ten thousand _ Dollars Per Lump Sum Amount. | 10,000.00/L.S. | 10,000.00 |
| 6. | 8 | EA. | Furnish and Install Type D Detector Loops @ Four hundred and seventy-five ____ Dollars Per Each. | 475.00 /EA. | 3,800.00 |

| ITEM | QUANTITY | UNIT | ITEM WITH UNIT PRICE WRITTEN IN WORDS | PRICE | TOTAL |
|---|---|---|---|---|---|
| 7. | 16 | EA. | Furnish and Install Type E Detector Loops @ Four hundred and seventy-five Dollars Per Each. | 475.00 /EA. | 7,600.00 |
| 8. | 700 | L.F. | Construct City C-3 Curb and Gutter @ Fifty Dollars Per Lineal Foot. | 50.00 /L.F. | 35,000.00 |
| 9. | 18 | L.F. | Construct Caltrans Type A AC Dike @ Sixty Dollars Per Lineal Foot. | 60.00 /L.F. | 1,080.00 |
| 10. | 6 | EA. | Construct Caltrans Case "A" Curb Ramp @ Six thousand two hundred Dollars Per Each. | 6,200.00 /EA. | 37,200.00 |
| 11. | 14 | EA. | Construct Caltrans Case "C" Curb Ramp @ Four thousand nine hundred Dollars Per Each. | 4,900.00 /EA. | 68,600.00 |
| 12. | 3,355 | S.F. | Construct 4-inch Thick Concrete Sidewalk @ Ten Dollars Per Square Foot. | 10.00 /S.F. | 33,550.00 |
| 13. | 1 | EA. | Construct City Standard SD-2 Drain Inlet @ Five thousand seven hundred Dollars Per Each. | 5,700.00 /EA. | 5,700.00 |
| 14. | 3,253 | TON | Furnish and Place Hot Mix Asphalt Concrete (Type B) @ Eighty-Six Dollars Per Ton. | 86.00 /TON | 279,758.00 |

| ITEM | QUANTITY | UNIT | ITEM WITH UNIT PRICE WRITTEN IN WORDS | PRICE | TOTAL |
|---|---|---|---|---|---|
| 15. | 2 | EA. | Relocate Existing Pedestrian Push Button poles complete and in-place @ Two thousand eight hundred ____ Dollars Per Each. | 2,800.00 /EA. | 5,600.00 |
| 16. | 4 | EA. | Construct New Residential Drive Approaches @ Three thousand ____ Dollars Per Each. | 3,000.00 /EA. | 12,000.00 |
| 17. | L.S. | L.S. | Crack Sealing @ Sixteen thousand _ Dollars Per Lump Sum Amount. | 16,000.00 /L.S. | 16,000.00 |
| 18. | 95,116 | S.F. | Cold Plane @ Twenty-five cents ____ Dollars Per Square Foot. | 0.25 /S.F. | 23,779.00 |
| 19. | 9,600 | S.F. | Full Depth Reconstruciton Pavement Patch @ Thirteen ____ Dollars Per Square Foot. | 13.00 /S.F. | 124,800.00 |
| 20. | L.S. | L.S. | Signing, Striping and Pavement Marking Modifications @ Ten thousand _ Dollars Per Lump Sum Amount. | 10,000.00 /L.S. | 10,000.00 |
| 21. | 10 | EA. | Adjust Water Valve Box to Grade @ One thousand ____ Dollars Per Each. | 1,000.00 /EA. | 10,000.00 |
| 22. | 16 | EA. | Adjust Sanity Sewer Manhole to Grade @ One thousand two hundred ____ Dollars Per Each. | 1,200.00 /EA. | 19,200.00 |

| ITEM | QUANTITY | UNIT | ITEM WITH UNIT PRICE WRITTEN IN WORDS | PRICE | TOTAL |
|---|---|---|---|---|---|
| 23. | 1 | EA. | Adjust Sanity Sewer Cleanout to Grade @ One thousand Dollars Per Each. | 1,000.00 /EA. | 1,000.00 |
| 24. | 10 | E.A. | Adjust Storm Drain Manhole to Grade @ One thousand two hundred Dollars Per Each. | 1,200.00 /EA. | 12,000.00 |
| 25. | L.S. | L.S. | Repair Landscape and Irrigation In-Kind @ Two thousand Dollars Per Lump Sum Amount. | 2,000.00 /L.S. | 2,000.00 |
| 26. | 2 | EA. | Reconstruct Survey Monuments @ One thousand six hundred Dollars Per Each. | 1,600.00 /EA. | 3,200.00 |
| | | | Total Amount of Bid: | $ 849,867.00 | |

Amount of Total Bid is Eight hundred & forty-nine thousand Eight hundred & sixty-seven Dollars and 00 Cents.

In the event of discrepancy between words and figures, the words shall prevail. In case of discrepancy between unit prices and totals, the unit price shall prevail.

* **Bid Item No. 1 Mobilization shall not exceed 5% of Total Bid.**

If written notice of the Award of Contract is mailed, faxed, or delivered to the undersigned at any time before this bid is withdrawn, the undersigned shall, within ten (10) days after the date of such mailing, faxing, or delivering of such notice, execute and deliver an agreement in the form of agreement present in these Contract Documents and give Performance and Payment Bonds in accordance with the specifications and bid as accepted.

The undersigned hereby designates as the office to which such Notice of Award of Contract may be mailed, faxed, or delivered:

1030 Gettysburg Avenue, Suite 107

Clovis, CA. 93612

Bidder's Public Liability and Property Damage Insurance is placed with:

Hiscox Insurance
_______________

_______________

Bidder's Workers' Compensation Insurance is placed with:
Mid Century Insurance
_______________

_______________

A bidder shall not submit a bid unless the bidder's California contractor's license number appears clearly on the bid, the license expiration date and class are stated, and the bid contains a statement that the representations made therein are made under penalty of perjury. Any bid submitted by a contractor who is not licensed pursuant to Business and Professions Code section 7028.15 shall be considered nonresponsive and shall be rejected.

**NOTE:** Each bid must give the full business address of the bidder and be signed by bidder with bidder's usual signature. Bids by partnerships must furnish the full name of all partners and must be signed in the partnership name by a general partner with authority to bind the partnership in such matters, followed by the signature and designation of the person signing. The name of the person signing shall also be typed or printed below the signature. Bids by corporations must be signed with the legal name of the corporation, followed by the name of the state of incorporation and by the signature and designation of the chairman of the board, president or any vice president, and then followed by a second signature by the secretary, assistant secretary, the chief financial officer or assistant treasurer. All persons signing must be authorized to bind the corporation in the matter. The name of each person signing shall also be typed or printed below the signature. Satisfactory evidence of the authority of the officer signing on behalf of a corporation shall be furnished.

The undersigned declares under penalty of perjury under the laws of the State of California that the representations made in this bid are true and correct.

Print or Type Name : Ramon Medina

Title: Secretary

Name of Company as Licensed: Terra West Construction Inc.

Business Address: 1030 Gettysburg Avenue, Suite 107

Clovis, CA. 93612

Telephone Number: (559) 348-1086

California Contractor License No.: 924631

Class and Expiration Date: Class A, Exp: 10/31/2022

State of Incorporation, if Applicable: CA

(X) Evidence of authority to bind corporation is attached.

Dated: January 18, 2022

Signed: [signature]

**California Secretary of State**
Electronic Filing

FILED
Secretary of State
State of California

# Corporation - Statement of Information No Change

Entity Name: TERRA WEST CONSTRUCTION, INC.

Entity (File) Number: C3359198
File Date: 11/12/2021
Entity Type: Corporation
Jurisdiction: CALIFORNIA
Document ID: GY40375

*There has been no change in any of the information contained in the previous complete Statement of Information filed with the California Secretary of State.*

By signing this document, I certify that the information is true and correct and that I am authorized by California law to sign.

Electronic Signature: Luis Garcia

*Use bizfile.sos.ca.gov for online filings, searches, business records, and resources.*

Document ID: GY40375

**California Secretary of State**
Electronic Filing

FILED
Secretary of State
State of California

# Corporation - Statement of Information

| | |
|---|---|
| Entity Name: | TERRA WEST CONSTRUCTION, INC. |
| Entity (File) Number: | C3359198 |
| File Date: | 11/08/2020 |
| Entity Type: | Corporation |
| Jurisdiction: | CALIFORNIA |
| Document ID: | GK89854 |

**Detailed Filing Information**

1. Entity Name: TERRA WEST CONSTRUCTION, INC.

2. Business Addresses:
   a. Street Address of Principal Office in California:
   854 N. Hornet Avenue
   Fresno, California 93727
   United States of America

   b. Mailing Address:
   854 N. Hornet Avenue
   Fresno, California 93727
   United States of America

   c. Street Address of Principal Executive Office:
   854 N. Hornet Avenue
   Fresno, California 93727
   United States of America

3. Officers:
   a. Chief Executive Officer:
   Luis Garcia
   854 N. Hornet Avenue
   Fresno, California 93727
   United States of America

   b. Secretary:
   Ramon Medina
   2018 Ashcroft Avenue
   Clovis, California 93611
   United States of America

Document ID: GK89854



*Use bizfile.sos.ca.gov for online filings, searches, business records, and resources.*

# California Secretary of State
Electronic Filing

## Corporation - Attachment to Statement of Information

**List of Additional Directors**:

1. Ramon Medina
   2018 Ashcroft Avenue
   Clovis, California 93611
   United States of America

2.

3.

4.

5.

6.

7.

Document ID: GK89854



*Use bizfile.sos.ca.gov for online filings, searches, business records, and resources.*

# BIDDER'S LIST OF SUBCONTRACTORS

Pursuant to the provisions of Section 4100 to 4113 inclusive, of the Government Code of the State of California, every bidder shall set forth the name and location of the place of business of each subcontractor who will perform work or labor in or about the construction of the work or improvement in an amount in excess of one-half (1/2) of one percent (1%) of the Bidder's total bid. If the Bidder fails to specify a subcontractor for any portion of the work in excess of one half (1/2) of one percent (1%) of the Bidder's total bid, he agrees to perform that portion himself. The following is the required list of subcontractors:

| Type of Work | Name, Address and Phone Number of Subcontractors | Contractor's License No. / DIR Registration |
|---|---|---|
| Concrete Flatwork | Fresno Concrete Construction Inc.<br>5450 S. Villa Ave.<br>Fresno CA. 93725 (559) 834-2031 | 389141<br>1000004109 |
| Crack Sealing | Austin Enterprise<br>P O Box 81926<br>Bakersfield, CA. 93380 (661) 589-1001 | 764893<br>1000001896 |
| Detector Loops & Push Buttons | California Professional Engineering Inc.<br>19062 San Jose Avenue<br>La Puente, CA. 91748 (626) 810-1338 | 793907<br>1000377609 |
| Striping & Signs | Central Valley Striping<br>1100 N. Gale Avenue<br>Lindsay, CA. 93247 (559) 586-1083 | 1035598<br>1000055865 |
| Traffic Control | Safety Network<br>1345 N. Rabe Avenue<br>Fresno, CA. 93727 (559) 291-1000 | 787285<br>1000012625 |
| | | |

January 18, 2022
Date

[signature]
(Contractor's Signature)

**(ATTACH ADDITIONAL SHEETS IF NECESSARY)**

Note: The Bidder's List of Subcontractors is part of the Bid Proposal Form. Signing the Bid Certification Page shall also constitute signature of this form.

## Exhibit 12-B: Bidder's List of Subcontractor (DBE and Non-DBE) - Part 1

As of March 1, 2015 Contractors (and sub-contractors) wishing to bid on public works contracts must be registered with the State Division of Industrial Relations and certified to bid on Public Works contracts. Please register at https://www.dir.ca.gov/Public-Works/Contractor-Registration.html. The local agency will verify registration of all contractors and subcontractors on public works projects at bid and thereafter annually to assure that yearly registration is maintained throughout the life of the project.

In accordance with Title 49, Section 26.11 of the Code of Federal Regulations, and Section 4104 of the Public Contract Code of the State of California, as amended, the following information is required for each sub-contractor who will perform work amounting to more than one half of one percent (0.5%) of the Total Base Bid or $10,000 (whichever is greater).

FEDERAL PROJECT NUMBER:

**Photocopy this form for additional firms.**

| Subcontractor Name & Location | Line Item & Description | Subcontract Amount | Percentage of Bid Item Subcontracted | Contractor License Number / DIR Reg Number | DBE (Y/N) | DBE Cert Number | Annual Gross Receipts |
|---|---|---|---|---|---|---|---|
| NAME: Fresno Conc.<br>City, State: Fresno | 8, 10-12 & 16 Concrete | 111,472.75 | 13.1 | 389141 / 1000004169 | Y | 203 | < $1 million<br>< $5 million<br>X < $10 million<br>< $15 million<br>Age of Firm in years: 45 |
| NAME: Austin ENT<br>City, State: Bakersfield CA | 17 Crack Sealing | 16,230.00 | 1.9 | 764893 / 1000001846 | Y | 13602 | < $1 million<br>X < $5 million<br>< $10 million<br>< $15 million<br>Age of Firm in years: 29 |
| NAME: Cen. Valley Striping<br>City, State: Lindsay CA | 20 Striping & Signs | 9748.00 | 1.1 | 1035558 / 1000055865 | Y | 46115 | X < $1 million<br>< $5 million<br>< $10 million<br>< $15 million<br>Age of Firm in years: 5 |
| NAME: Safety Network<br>City, State: Fresno CA | 2 Traffic Control | 54,425 | 6.4 | 787285 / 1000012625 | N | | < $1 million<br>X < $5 million<br>< $10 million<br>< $15 million<br>Age of Firm in years: 12 |
| NAME: Cal. Professional Engin.<br>City, State: LaPuente, CA | 6, 7 & 15 Loops & Push Button | 17,000 | 2.0 | 793907 / 1000377609 | Y | 31277 | < $1 million<br>< $5 million<br>< $10 million<br>X < $15 million<br>Age of Firm in years: 20 |
| NAME:<br>City, State: | | | | | | | < $1 million<br>< $5 million<br>< $10 million<br>< $15 million<br>Age of Firm in years: |
| NAME:<br>City, State: | | | | | | | < $1 million<br>< $5 million<br>< $10 million<br>< $15 million<br>Age of Firm in years: |
| NAME:<br>City, State: | | | | | | | < $1 million<br>< $5 million<br>< $10 million<br>< $15 million<br>Age of Firm in years: |
| NAME:<br>City, State: | | | | | | | < $1 million<br>< $5 million<br>< $10 million<br>< $15 million<br>Age of Firm in years: |

Distribution – Original: Local Agency File; Copy: DLAE w/Award Package

## Exhibit 12-B: Bidder's List of Subcontractor (DBE and Non-DBE) - Part 2

In accordance with Title 49, Section 26 of the Code of Federal Regulations, the Bidder shall list all subcontractors who provided a quote or bid but **were not selected** to participate as a subcontractor on this project.

Photocopy this form for additional firms.

FEDERAL PROJECT NUMBER:

| Subcontractor Name & Location | Line Item & Description | Subcontract Amount | Percentage of Bid Item Subcontracted | Contractor License Number / DIR Reg Number | DBE (Y/N) | DBE Cert Number | Annual Gross Receipts |
|---|---|---|---|---|---|---|---|
| NAME Sterndahl Enterprises<br>City, State Sun Valley CA | 20 Striping | 32,500 | 3.8 | 421823<br>1000006714 | N | | < $1 million<br>X < $5 million<br>< $10 million<br>< $15 million<br>Age of Firm in years 35 |
| NAME Chrisp Co<br>City, State Fremont CA | 20 Striping | 31,400 | 3.7 | 374600<br>1000000306 | N | | < $1 million<br>< $5 million<br>< $10 million<br>X < $15 million<br>Age of Firm in years 50 |
| NAME Super Seal<br>City, State Fillmore CA | 20 Striping | 28,765 | 3.4 | 396627<br>1000000752 | Y | 2803 | < $1 million<br>< $5 million<br>X < $10 million<br>< $15 million<br>Age of Firm in years 30 |
| NAME Madera Conc.<br>City, State Madera CA | 8, 10-12 & 16 Concrete | 122,519 | 14.4 | 983821<br>1000059250 | Y | 41872 | < $1 million<br>X < $5 million<br>< $10 million<br>< $15 million<br>Age of Firm in years 10 |
| NAME T&T Paint<br>City, State Fresno | 20 Striping | 17,720 | 2.1 | 687921<br>1000046338 | N | | < $1 million<br>X < $5 million<br>< $10 million<br>< $15 million<br>Age of Firm in years 35 |
| NAME<br>City, State | | | | | | | < $1 million<br>< $5 million<br>< $10 million<br>< $15 million<br>Age of Firm in years |
| NAME<br>City, State | | | | | | | < $1 million<br>< $5 million<br>< $10 million<br>< $15 million<br>Age of Firm in years |
| NAME<br>City, State | | | | | | | < $1 million<br>< $5 million<br>< $10 million<br>< $15 million<br>Age of Firm in years |
| NAME<br>City, State | | | | | | | < $1 million<br>< $5 million<br>< $10 million<br>< $15 million<br>Age of Firm in years |

Distribution – Original: Local Agency File; Copy: DLAE w/Award Package

# MAJOR MATERIAL SUPPLIERS INFORMATION

The bidder shall indicate opposite each item of material listed below the name of the manufacturer or supplier of the material proposed to be furnished under the bid. Failure to comply with this requirement may render the bid informal and may cause its rejection.

| | **Equipment/Material** | **Manufacturer or Supplier** |
|---|---|---|
| 1. | Hot Mix Asphalt Concrete | Martin Marietta |
| 2. | Class 2 Aggregate Base | Granite Coalinga |
| 3. | Concrete | Cemex |

Awarding a contract under this bid will not imply approval by the City of manufacturers or suppliers listed by the bidder. No substitution will be permitted after award of contract unless equipment or material of the listed manufacturer or supplier cannot meet the specifications.

Note: The Major Material Suppliers Information is part of the Bid Proposal Form. Signing the Bid Certification Page shall also constitute signature of this form.

*(THE BIDDER'S EXECUTION ON THE SIGNATURE PORTION OF THIS BID SHALL ALSO CONSTITUTE AN ENDORSEMENT AND EXECUTION OF THOSE CERTIFICATIONS WHICH ARE A PART OF THIS BID)*

# EQUAL EMPLOYMENT OPPORTUNITY CERTIFICATION

The bidder Terra West Construction Inc., proposed subcontractor ______________________, hereby certifies that he has X , has not _____, participated in a previous contract or subcontract subject to the equal opportunity clauses, as required by Executive Orders 10925, 11114, or 11246, and that, where required, he has filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filling requirements.

**Note:** The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7(b) (1)), and must be submitted by bidders and proposed subcontractors only in connection with contracts and subcontracts which are subject to the equal opportunity clause. Contracts and subcontracts which are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally only contracts or subcontracts of $10,000 or under are exempt.)

Currently, Standard Form 100 (EEO-1) is the only report required by the Executive Orders or their implementing regulations.

Proposed prime contractors and subcontractors who have participated in a previous contract or subcontract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7(b) (1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

# PUBLIC CONTRACT CODE

## Public Contract Code Section 10285.1 Statement

In conformance with Public Contract Code Section 10285.1 (Chapter 376, Stats. 1985), the bidder hereby declares under penalty of perjury under the laws of the State of California that the bidder has ___ , has not _X_ been convicted within the preceding three years of any offenses referred to in that section, including any charge of fraud, bribery, collusion, conspiracy, or any other act in violation of any state or Federal antitrust law in connection with the bidding upon, award of, or performance of, any public works contract, as defined in Public Contract Code Section 1101, with any public entity, as defined in Public Contract Code Section 1100, including the Regents of the University of California or the Trustees of the California State University. The term "bidder" is understood to include any partner, member, officer, director, responsible managing officer, or responsible managing employee thereof, as referred to in Section 10285.1.

Note: The bidder must place a checkmark after "has" or "has not" in one of the blank spaces provided. The above Statement is part of the Bid Proposal Form. Signing the Bid Certification Page shall also constitute signature of this Statement.

---

## Public Contract Code Section 10162 Questionnaire

In conformance with Public Contract Code Section 10162, the Bidder shall complete, under penalty of perjury, the following questionnaire:

Has the bidder, any officer of the bidder, or any employee of the bidder who has a proprietary interest in the bidder, ever been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state, or local government project because of a violation of law or a safety regulation?

Yes _____ No _X_

If the answer is yes, explain the circumstances in the following space.

Note: The above Statement is part of the Bid Proposal Form. Signing the Bid Certification Page shall also constitute signature of this Statement.

## Public Contract Code 10232 Statement

In conformance with Public Contract Code Section 10232, the Contractor, hereby states under penalty of perjury, that no more than one final unappealable finding of contempt of court by a federal court has been issued against the Contractor within the immediately preceding two-year period because of the Contractor's failure to comply with an order of a federal court which orders the Contractor to comply with an order of the National Labor Relations Board.

Note: The above Statement is part of the Bid Proposal Form. Signing the Bid Certification Page shall also constitute signature of this Statement.
Bidders are cautioned that making a false certification may subject the certifier to criminal prosecution.

______________________________________________

# DEBARMENT AND SUSPENSION CERTIFICATION

TITLE 49, CODE OF FEDERAL REGULATIONS, PART 29

The bidder, under penalty of perjury, certifies that, except as noted below, he/she or any other person associated therewith in the capacity of owner, partner, director, officer, manager:

- is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any Federal agency;
- has not been suspended, debarred, voluntarily excluded or determined ineligible by any Federal agency within the past 3 years;
- does not have a proposed debarment pending; and
- has not been indicted, convicted, or had a civil judgement rendered against it by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past 3 years.

If there are any exceptions to this certification, insert the exceptions in the following space.

Exceptions will not necessarily result in denial of award, but will be considered in determining bidder responsibility. For any exception noted above, indicate below to whom it applies, initiating agency, and dates of action.

Notes: Providing false information may result in criminal prosecution or administrative sanctions.

The above certification is part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of this Certification.

# NONLOBBYING CERTIFICATION
# FOR FEDERAL-AID CONTRACTS

The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

(l) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in conformance with its instructions.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such subrecipients shall certify and disclose accordingly.

## Exhibit 10-Q Disclosure of Lobbying Activities

COMPLETE THIS FORM TO DISCLOSE LOBBYING ACTIVITIES PURSUANT TO 31 U.S.C. 1352

**1. Type of Federal Action:**

☐ a. contract N/A
b. grant
c. cooperative agreement
d. loan
e. loan guarantee
f. loan insurance

**2. Status of Federal Action:**

☐ a. bid/offer/application
b. initial award
c. post-award

**3. Report Type:**

☐ a. initial
b. material change

**For Material Change Only:**
year ____ quarter _________
date of last report___________

4. **Name and Address of Reporting Entity**

☐ Prime ☐ Subawardee
Tier _______, if known

**Congressional District,** if known

5. **If Reporting Entity in No. 4 is Subawardee, Enter Name and Address of Prime:**

**Congressional District,** if known

6. **Federal Department/Agency:**

7. **Federal Program Name/Description:**

**CFDA Number,** if applicable ___________________

8. **Federal Action Number,** if known:

9. **Award Amount,** if known:

10. **Name and Address of Lobby Entity**
(If individual, last name, first name, MI)

11. **Individuals Performing Services**
(including address if different from No. 10)
(last name, first name, MI)

(attach Continuation Sheet(s) if necessary)

12. **Amount of Payment (check all that apply)**
$ ____________ ☐ actual ☐ planned

13. **Form of Payment (check all that apply):**
☐ a. cash
☐ b. in-kind; specify: nature ______________
Value ______________

14. **Type of Payment (check all that apply)**
☐ a. retainer
☐ b. one-time fee
☐ c. commission
☐ d. contingent fee
☐ e deferred
☐ f. other, specify_____________________

15. **Brief Description of Services Performed or to be performed and Date(s) of Service, including officer(s), employee(s), or member(s) contacted, for Payment Indicated in Item 12:**

(attach Continuation Sheet(s) if necessary)

16. **Continuation Sheet(s) attached:** **Yes** ☐ **No** ☐

17. Information requested through this form is authorized by Title 31 U.S.C. Section 1352. This disclosure of lobbying reliance was placed by the tier above when his transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to Congress semiannually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

Signature: N/A
Print Name: ____________________
Title: ____________________
Telephone No.: ____________________ Date:__________

Authorized for Local Reproduction

**Federal Use Only:**

Standard Form - LLL

Revised 06/04Standard Form LLL Rev. 04-28-06

## INSTRUCTIONS FOR COMPLETING EXHIBIT 10-Q DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime federal recipient at the initiation or receipt of covered federal action or a material change to previous filing pursuant to title 31 U.S.C. Section 1352. The filing of a form is required for such payment or agreement to make payment to lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress an officer or employee of Congress or an employee of a Member of Congress in connection with a covered federal action. Attach a continuation sheet for additional information if the space on the form is inadequate. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered federal action for which lobbying activity is or has been secured to influence, the outcome of a covered federal action.
2. Identify the status of the covered federal action.
3. Identify the appropriate classification of this report. If this is a follow-up report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last, previously submitted report by this reporting entity for this covered federal action.
4. Enter the full name, address, city, state, and zip code of the reporting entity. Include Congressional District if known. Check the appropriate classification of the reporting entity that designates if it is or expects to be a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the first tier. Subawards include but are not limited to: subcontracts, subgrants, and contract awards under grants.
5. If the organization filing the report in Item 4 checks "Subawardee" then enter the full name, address, city, state, and zip code of the prime federal recipient. Include Congressional District, if known.
6. Enter the name of the federal agency making the award or loan commitment. Include at least one organization level below agency name, if known. For example, Department of Transportation, United States Coast Guard.
7. Enter the federal program name or description for the covered federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans and loan commitments.
8. Enter the most appropriate federal identifying number available for the federal action identification in item 1 (e.g., Request for Proposal (RFP) number, Invitation for Bid (IFB) number, grant announcement number, the contract grant. or loan award number, the application/proposal control number assigned by the federal agency). Include prefixes, e.g., "RFP-DE-90-001."
9. For a covered federal action where there has been an award or loan commitment by the Federal agency, enter the federal amount of the award/loan commitments for the prime entity identified in item 4 or 5.
10. Enter the full name, address, city, state, and zip code of the lobbying entity engaged by the reporting entity identified in Item 4 to influence the covered federal action.
11. Enter the full names of the individual(s) performing services and include full address if different from 10 (a). Enter Last Name, First Name and Middle Initial (MI).
12. Enter the amount of compensation paid or reasonably expected to be paid by the reporting entity (Item 4) to the lobbying entity (Item 10). Indicate whether the payment has been made (actual) or will be made (planned). Check all boxes that apply. If this is a material change report, enter the cumulative amount of payment made or planned to be made.
13. Check all boxes that apply. If payment is made through an in-kind contribution, specify the nature and value of the in-kind payment.
14. Check all boxes that apply. If other, specify nature.
15. Provide a specific and detailed description of the services that the lobbyist has performed or will be expected to perform and the date(s) of any services rendered. Include all preparatory and related activity not just time spent in actual contact with federal officials. Identify the federal officer(s) or employee(s) contacted or the officer(s) employee(s) or Member(s) of Congress that were contacted.
16. Check whether or not a continuation sheet(s) is attached.
17. The certifying official shall sign and date the form, and print his/her name title and telephone number.

Public reporting burden for this collection of information is estimated to average 30-minutes per response, including time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0046), Washington, D.C. 20503. SF-LLL-Instructions Rev. 06-04

## EXHIBIT 15-G CONSTRUCTION CONTRACT DBE COMMITMENT

1. Local Agency: City of Lemoore
2. Contract DBE Goal: 19%
3. Project Description: Bush Street Overlay
4. Project Location: 19-1/2 Avenue to 19th Avenue
5. Bidder's Name: Terra West Construction Inc.
6. Prime Certified DBE: ☒
7. Bid Amount: 849,867.00
8. Total Dollar Amount for **ALL** Subcontractors: ~~211,875.75~~ RM 208,875.75
9. Total Number of **ALL** Subcontractors: 5

| 10. Bid Item Number | 11. Description of Work, Service, or Materials Supplied | 12. DBE Certification Number | 13. DBE Contact Information (Must be certified on the date bids are opened) | 14. DBE Dollar Amount |
|---|---|---|---|---|
| 8,10-12 & 16 | Concrete Flatwork | 203 | Fresno Concrete Construction<br>5450 S. Villa Ave.<br>Fresno, CA. 93725 | 111,472.75 |
| 17 | Crack Sealing | 13602 | Austin Enterprise<br>P O Box 81926<br>Bakersfield, CA. 93380 | 16,230.00 |
| 6,7& 15 | Traffic Loops & Ped. Push Button | 31277 | California Professional Engineering Inc.<br>19062 San Jose Avenue<br>La Puente, CA. 91748 | 17,000.00 |
| 4 & 5 | Clearing & Grubbing & Roadway Excavation | 48176 | Terra West Construction Inc.<br>1030 Gettysburg Avenue Suite 107<br>Clovis, CA. 93612 | 40,000.00 |
| 20 | Signing, Striping, & Pavement Mod. | 46115 | Central Valley Striping<br>1100 N. Gale Avenue<br>Lindsay, CA. 93247 | 9,748.00 |
| | | | | |
| | | | | |

**Local Agency to Complete this Section upon Execution of Award**

21. Local Agency Contract Number: ____________
22. Federal-Aid Project Number: ____________
23. Bid Opening Date: ____________
24. Contract Award Date: ____________
25. Award Amount: ____________

Local Agency certifies that all DBE certifications are valid and information on this form is complete and accurate.

26. Local Agency Representative's Signature ____________ 27. Date ____________

28. Local Agency Representative's Name ____________ 29. Phone ____________

30. Local Agency Representative's Title ____________

**15. TOTAL CLAIMED DBE PARTICIPATION** $194,450.75 — 22.9 %

IMPORTANT: Identify all DBE firms being claimed for credit, regardless of tier. Names of the First Tier DBE Subcontractors and their respective item(s) of work listed above must be consistent, where applicable with the names and items of the work in the "Subcontractor List" submitted with your bid. Written confirmation of each listed DBE is required.

16. Preparer's Signature: [signature]
17. Date: January 18, 2022
18. Preparer's Name: Ramon Medina
19. Phone: (559) 348-1086
20. Preparer's Title: Secretary

DISTRIBUTION: 1. Original – Local Agency
2. Copy – Caltrans District Local Assistance Engineer (DLAE). Failure to submit to DLAE within 30 days of contract execution may result in de-obligation of federal funds on contract.
3. Include additional copy with award package.

## INSTRUCTIONS – CONSTRUCTION CONTRACT DBE COMMITMENT

CONTRACTOR SECTION

**1. Local Agency** - Enter the name of the local agency that is administering the contract.
**2. Contract DBE Goal** - Enter the contract DBE goal percentage as it appears on the project advertisement.
**3. Project Location** - Enter the project location(s) as it appears on the project advertisement.
**4. Project Description** - Enter the project description as it appears on the project advertisement (Bridge Rehab, Seismic Rehab, Overlay, Widening, etc).
**5. Bidder's Name** - Enter the contractor's firm name.
**6. Prime Certified DBE** - Check box if prime contractor is a certified DBE.
**7. Bid Amount** - Enter the total contract bid dollar amount for the prime contractor.
**8. Total Dollar Amount for ALL Subcontractors** – Enter the total dollar amount for all subcontracted contractors. SUM = (DBEs + all Non-DBEs). Do not include the prime contractor information in this count.
**9. Total number of ALL subcontractors** – Enter the total number of all subcontracted contractors. SUM = (DBEs + all Non-DBEs). Do not include the prime contractor information in this count.
**10. Bid Item Number** - Enter bid item number for work, services, or materials supplied to be provided.
**11. Description of Work, Services, or Materials Supplied** - Enter description of work, services, or materials to be provided. Indicate all work to be performed by DBEs including work performed by the prime contractor's own forces, if the prime is a DBE. If 100% of the item is not to be performed or furnished by the DBE, describe the exact portion to be performed or furnished by the DBE. See LAPM Chapter 9 to determine how to count the participation of DBE firms.
**12. DBE Certification Number** - Enter the DBE's Certification Identification Number. All DBEs must be certified on the date bids are opened.
**13. DBE Contact Information** - Enter the name, address, and phone number of all DBE subcontracted contractors. Also, enter the prime contractor's name and phone number, if the prime is a DBE.
**14. DBE Dollar Amount** - Enter the subcontracted dollar amount of the work to be performed or service to be provided. Include the prime contractor if the prime is a DBE. See LAPM Chapter 9 for how to count full/partial participation.
**15. Total Claimed DBE Participation** - $: Enter the total dollar amounts entered in the "DBE Dollar Amount" column. %: Enter the total DBE participation claimed ("Total Claimed DBE Participation Dollars" divided by item "Bid Amount"). If the total % claimed is less than item "Contract DBE Goal," an adequately documented Good Faith Effort (GFE) is required (see Exhibit 15-H DBE Information - Good Faith Efforts of the LAPM).
**16. Preparer's Signature** - The person completing the DBE commitment form on behalf of the contractor's firm must sign their name.
**17. Date** - Enter the date the DBE commitment form is signed by the contractor's preparer.
**18. Preparer's Name** - Enter the name of the person preparing and signing the contractor's DBE commitment form.
**19. Phone** - Enter the area code and phone number of the person signing the contractor's DBE commitment form.
**20. Preparer's Title** - Enter the position/title of the person signing the contractor's DBE commitment form.

LOCAL AGENCY SECTION

**21. Local Agency Contract Number** - Enter the Local Agency contract number or identifier.
**22. Federal-Aid Project Number** - Enter the Federal-Aid Project Number(s).
**23. Bid Opening Date** - Enter the date contract bids were opened.
**24. Contract Award Date** - Enter the date the contract was executed.
**25. Award Amount** – Enter the contract award amount as stated in the executed contract.
**26. Local Agency Representative's Signature** - The person completing this section of the form for the Local Agency must sign their name to certify that the information in this and the Contractor Section of this form is complete and accurate.
**27. Date** - Enter the date the DBE commitment form is signed by the Local Agency Representative.
**28. Local Agency Representative's Name** - Enter the name of the Local Agency Representative certifying the contractor's DBE commitment form.
**29. Phone** - Enter the area code and phone number of the person signing the contractor's DBE commitment form.
**30. Local Agency Representative Title** - Enter the position/title of the Local Agency Representative certifying the contractor's DBE commitment form.

# NONCOLLUSION AFFIDAVIT

(Title 23 United States Code Section 112 and
Public Contract Code Section 7106)

To the CITY of LEMOORE

In conformance with Title 23 United States Code Section 112 and Public Contract Code 7106 the bidder declares as follows:

I am the Secretary of Terra West Construction Inc., the party making the foregoing bid.

The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham . The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or to refrain from bidding. The bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder. All statements contained in the bid are true. The bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on _[date], at _[city], _ [state].
January 18, 2022 at Clovis, CA.

[signature]

Name (Print) Ramon Medina

Title: Secretary

# DRUG-FREE WORKPLACE CERTIFICATION

This Drug-Free Workplace Certification is required pursuant to Government Code Sections 8350 *et seq.*, the Drug-Free Workplace Act of 1990. The Drug-Free Workplace Act of 1990 requires that every person or organization awarded a contract or grant for the procurement of any property or services from any State agency must certify that it will provide a drug-free workplace by doing certain specified acts. In addition, the Act provides that each contract awarded by a State agency may be subject to suspension of payments or termination of the contract, or both, and the contractor may be subject to debarment from future contracting if the state agency determines that specified acts have occurred.

Pursuant to Government Code Section 8355, every person or organization awarded a contract or grant from a State agency shall certify that it will provide a drug-free workplace by doing all of the following:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance is prohibited in the person's or organization's workplace and specifying actions which will be taken against employees for violations of the prohibition;

(b) Establishing a drug-free awareness program to inform employees about all of the following:

(1) The dangers of drug abuse in the workplace;
(2) The person's or organization's policy of maintaining a drug-free workplace;
(3) The availability of drug counseling, rehabilitation and employee-assistance programs;
(4) The penalties that may be imposed upon employees for drug abuse Violations;

(c) Requiring that each employee engaged in the performance of the contract or grant be given a copy of the statement required by subdivision (a) and that, as a condition of employment on the contract or grant, the employee agrees to abide by the terms of the statement.

I, the undersigned, agree to fulfill the terms and requirements of Government Code Section 8355 listed above and will publish a statement notifying employees concerning (a) the prohibition of controlled substance at the workplace, (b) establishing a drug-free awareness program, and (c) requiring that each employee engaged in the performance of the contract or grant be given a copy of the statement required by Section 8355(a) and requiring that the employee agree to abide by the terms of that statement.

I also understand that if the City determines that I have either (a) made a false certification herein, or (b) violated this certification by failing to carry out the requirements of Section 8355, that the contract or grant awarded herein is subject to suspension of payments, termination, or both. I further understand that should I violate the terms of the Drug-Free Workplace Act of 1990, I may be subject to debarment in accordance with the requirements of Section 8350 *et seq*.

I acknowledge that I am aware of the provisions of Government Code Section 8350 *et seq.* and hereby certify that I will adhere to the requirements of the Drug-Free Workplace Act of 1990.

Terra West Construction Inc.
Name of Contractor

Signature

Ramon Medina — January 18, 2022
Print Name — Date

# INFORMATION REQUIRED OF BIDDER

The bidder shall furnish the following information. Failure to comply with this requirement may render the Bid non-responsive and may cause its rejection. Additional sheets shall be attached as required.

(1) Number of years as a contractor in construction work of this type: 11

(2) Names and titles of all officers of contractor's firm:

Luis Garcia-President/Treasurer

Ramon Medina-Secretary

(3) Name of person who inspected site of proposed work for your firm: Ramon Medina

Date of Inspection: January 10, 2022

(4) Name, address, and telephone number of surety company and agent who will provide the required bonds on this contract: James G. Parker Insurance Associates/Tokio Marine

1753 E. Fir Avenue, Fresno, CA. 93720 (559) 241-7848

(5) ATTACH TO THIS BID the experience resume of the person who will be designated chief construction superintendent.

(6) List five projects completed as of recent date involving work of similar type and complexity:

Project: Orange Cove Police Station Parking Lot

Contract Price: $71,866

Name, address and telephone number of owner: City of Orange Cove, 633 Sixth Street, Orange Cove CA. 93646 (559) 626) 4488

Name and telephone number of Contact Person: Angela Hall (559) 473-1371

Project: J&K Street Rehabilitation

Contract Price: $305,806

Name, address and telephone number of owner: City of Reedley 1717 9th Street, Reedley, CA. 93654 (559) 637-4200

Name and telephone number of Contact Person: Marilu Morales (559) 637-4200

Project: Paving of Various Dirt Alleys

Contract Price: $502,195

Name, address and telephone number of owner: City of Coalinga 155 W. Durian Street, Coalinga, CA. 93210 (559) 935-1533

Name and telephone number of Contact Person: Chris Marks (559) 447-9075

Project: Walmart #2001 Fuel Station

Contract Price: $264,238

Name, address and telephone number of owner: Wal Mart Real Estate Business TR/Wal Mart Stores Inc. 805 SE Moberly Lane, Betonville, AR. 72716-5570 (479)464-0357

Name and telephone number of Contact Person: Joe Simonson (760) 690-6838

Project: Driveway at 3790 Buena Vista

Contract Price: $49,138

Name, address and telephone number of owner: Jimmy & Susan Heskett, 3790 Buena Vista Avenue, Fresno, CA. 93711 (559) 309-2574

Name and telephone number of Contact Person: David Soto (559) 318-6002

Note: The above information is part of the Bid Proposal Form. Signing the Bid Certification Page shall also constitute signature of this Statement.

# RAMON MEDINA

**2018 Ashcroft Avenue • Clovis, CA. 93611 • Cell: 559-348-1086 • rlvmedina@gmail.com**

**Profile**

Reliable construction professional offering more than 25 years of success in estimating and managing civil projects. A qualified and competent professional recognized for expertise in estimation, project cost, team building, leadership, quality control, construction planning, scheduling, vendor, material and subcontractor management, and budget analysis. Developer of relationships with owners such as CDOT, Cities of Fresno, Lemoore, Hanford, Madera, Porterville, Clovis, Turlock, San Joaquin, Modesto, MID, Clovis Unified, Sanger Unified, Turlock Unified, Kings County, Dragados/Flatiron, private owners, and engineering firms.

**Education**

Delano High School, Delano, CA. graduated June 1990

California Polytechnic State University, San Luis Obispo
Major: Construction Management
Bachelor of Science Degree, June 1996

**Summary of Work Experience**

**Chief Estimator/Senior Project Manager** (5/2021-Present)
Terra West Construction Inc. Fresno, CA.

- Corporate Secretary and responsible for filling out bid documents, requesting bid bonds, performing quantity take-offs, and estimating private, subcontractor, and public works projects.
- Applied and was granted DBE, SBE, DIR, CSLB, and corporate certifications.
- Created company hierarchy structure.
- Billed for company rental equipment.
- Prepare and submit project schedules, submittals, RFI's, process change orders and billings.
- Responsible for creating company cost accounting system utilizing Quickbooks.
- Created cost codes for various construction activities in order to track costs and quantities.
- Assisted in creating payroll system.

**Chief Estimator/Senior Project Manager** (7/2019 to 5/2021)
**Project Manager/Estimator** (1/2011 to 3/2018)
Bush Engineering, Hanford & Fresno, CA.

- Performed take-offs, estimated, and managed civil projects encompassing demolition, earthwork, wet utilities, concrete, grading, aggregate base, and hot mix asphalt up to $25 million.
- Developed and utilized Excel based estimating software to bid competitive projects.
- Created standardized cost codes, crew timecard, equipment inspection checklist, labor & equipment rate sheet, project filing system, and internal equipment rates.
- Dispatched crews and internal/external equipment.
- Managed two recycle aggregate plants and established internal/external pricing.
- Oversaw and managed estimating and project management departments.

**Chief Estimator/Senior Project Manager**
Machado & Sons Construction Inc., Turlock, CA. (4/2018 to 7/2019)

- Introduced estimating and project management capabilities for public works projects.
- Standardized and developed demolition, earthwork, grading, concrete flatwork, and paving phase codes in Viewpoint.
- Created earthwork, grading, concrete, paving crews, equipment, and tasks in B2W Estimating Software.
- Successful on $3.5 million of public works projects, while bidding with rental rates in competitive environment.
- Mentored Project Engineers and Project Managers to manage projects effectively.

**Project Manager/Estimator** (6/1996 to 11/2010)
**Office/Project Engineer** (1/1995 to 9/1995)
Granite Construction Company, Fresno, CA. (Central Valley Branch-6/1996-11/2010)
Granite Construction Company, El Centro, CA (So. California Branch-1/1995-9/1995)

- Estimated projects up to $30 million.
- Project Engineer of projects from $200,000 to $12 million.
- Project Manager of projects up to $10 million.
- Create revenue and cost forecasts.
- Perform and report daily and weekly unit costs to ensure projects are within budget.

- Create weekly and monthly project schedules.
- Schedule crews and subcontractors.
- Performed quantity take-offs on successful bid projects from $30,000-$75 million.
- Provide administrator liaison between owners/subcontractors and Granite Construction.

**Computer Applications**

| | | |
|---|---|---|
| Microsoft Word | Microsoft Outlook | AGTEK 4D |
| Microsoft Excel | HCSS Heavy Job | On-Screen Take-off |
| Microsoft Power Point | B.I.D.S. 2 (Estimating Software) | AutoCad Lt |
| Microsoft Projects | Primavera Suretrak | J.D. Edwards (AS-400) |
| B2W Estimating | Bluebeam | Viewpoint by Vista |
| Quickbooks | | |

**Professional Honors/ Certifications/ Accomplishments**

Certified Erosion, Sediment and Storm Water Inspector (CESSWI), Certification No. 0927
Qualified SWPPP Practitioner (QSP) Certification No. 27468
NPDES Construction Water Pollution 24 Hour Training
San Joaquin Valley Air Pollution Control District Regulation VIII Dust Control Training
10 Hour OSHA Certification
Sigma Lambda Chi (National Honor Society for Construction Managers)
First Aid Certified
Associated Students of Construction Management (ASCM)
Certified nuclear gauge operator (from Troxler)
Bid and managed one year warranty rubberized open-grade asphalt concrete overlay project on Interstate 5 (First warranty project for CDOT and recipient of "The Innovative Project Award for 2000" from The Rubber Pavements Association).

**Hobbies/Activities**

Running half and full marathons.
Hiking and cycling. (Hiked Mount Whitney twice via John Muir Trail)
Personal home do-it yourselfer

**Language Skills**

Fluent in English and Spanish

**References**

Furnished Upon Request

**Project History**

See attached list of projects.

# STATEMENT OF LICENSURE

UNDER PENALTY OF PERJURY, I swear that the license or certificate of licensure (a copy of which is attached hereto) is mine, is current and valid, and is in a classification appropriate to the work to be undertaken.

California Contractors License
*Licensee*

924631 Exp: 10/31/2022
*Contractor's License Number and Expiration Date*

A
*License Classification*

Signed: ______________________

If the bidder possesses a current City of Lemoore Business License at Bid Day, the bidder certifies its number is N/A, dated ______________________.

# CERTIFICATION OF COMPLIANCE WITH STATE LABOR CODE SECTION 3700

In compliance with State Labor Code Section 1861:

*I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract.*

Dated: January 18, 20 22

Terra West Construction Inc.
*Contractor*

*By:* [signature]

*(Seal if Corporation)*

Ramon Medina-Secretary

# BID CERTIFICATION PAGE

Accompanying this bid is BIDDER'S BOND
*(NOTICE: INSERT THE WORDS "CASH($ ________)," "CASHIER'S CHECK," "CERTIFIED CHECK," OR "BIDDER'S BOND," AS THE CASE MAY BE.)*
in amount equal to at least ten percent of the total of the bid.

The names of all persons interested in the foregoing bid as principals are as follows:

***IMPORTANT NOTICE:*** *If bidder or other interested person is a corporation, state legal name of corporation, also names of the president, secretary, treasurer, and manager thereof; if a copartnership, state true name of firm, also names of all individual copartners composing firm; if bidder or other interested person is an individual, state first and last names in full.*

President: Luis Garcia

Secretary: Ramon Medina

Treasurer: Luis Garcia

Manager: ____________________

Licensed in conformance with an act providing for the registration of Contractors,

License No. 924631 Classification(s) A

## ADDENDA

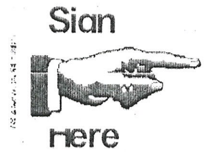
This Bid is submitted with respect to the changes to the contract included in addenda number/s

1,2,3,4

*(Fill in addenda numbers if addenda have been received and insert, in this Bid, any Engineer's Estimate sheets that were received as part of the addenda.)*

By my signature on this bid I certify, under penalty of perjury under the laws of the State of California, that the foregoing questionnaire and statements of Public Contract Code Sections 10162, 10232 and 10285.1 are true and correct and that the bidder has complied with the requirements of Section 8103 of the Fair Employment and Housing Commission Regulations (Chapter 5, Title 2 of the California Administrative Code). By my signature on this bid I further certify, under penalty of perjury under the laws of the State of California and the United States of America, that the Noncollusion Affidavit required by Title 23 United States Code, Section 112 and Public Contract Code Section 7106; and the Title 49 Code of Federal Regulations, Part 29 Debarment and Suspension Certification are true and correct.

Date: January 18, 2022




Ramon Medina-Secretary
Signature and Title of Bidder

Business Address 1030 Gettysburg Avenue, Clovis, CA. 93612

Place of Business 1030 Gettysburg Avenue, Clovis, CA. 93612

Place of Residence 2018 Ashcroft Avenue, Clovis, CA. 93611

# ADDENDUM NUMBER ONE

# FOR THE

# CITY OF LEMOORE

## BUSH STREET OVERLAY PROJECT
## HIP-5115(040)

REGISTERED PROFESSIONAL ENGINEER
JEFFERY S. COWART
NO. 41964
CIVIL
STATE OF CALIFORNIA

December 16, 2021

**OWNER:**
City of Lemoore
119 Fox Street
Lemoore, CA 93245
(559) 924-6700

**PREPARED BY:**
QK
901 E. Main Street
Visalia, CA 93292
(559) 733-0440

200160

## ADDENDUM NUMBER ONE

**The following additions, deletions, or modifications shall become part of the Contract Documents for this Project:**

**REVISIONS TO SPECIFICATIONS**

### ITEM NO. 1 BID CONDITIONS – ADDITION

A second **non-mandatory** pre-bid meeting is scheduled for Wednesday, December 22, 2021, at 2:00 p.m at the intersection of Bush Street and 19 1/2 Avenue. This meeting is to inform bidders of project requirements and subcontractors of subcontracting and material supply opportunities.

**NOTE:** **One copy of this Addendum shall be signed by the Contractor and must be submitted with the bid as acknowledgement of receipt of the acceptance of this Addendum.**

Prepared by: ______________________ December 16, 2021
Jeffery S. Cowart, P.E. Date
QK

Accepted by: ______________________ December 16, 2021
Contractor (signature) Date

# ADDENDUM NUMBER TWO

# FOR THE

# CITY OF LEMOORE

## BUSH STREET OVERLAY PROJECT
## HIP-5115(040)

January 7, 2021

**OWNER:**
City of Lemoore
119 Fox Street
Lemoore, CA 93245
(559) 924-6700

**PREPARED BY:**
QK
901 E. Main Street
Visalia, CA 93292
(559) 733-0440

200160

## ADDENDUM NUMBER TWO

**The following information, additions, deletions, or modifications shall become part of the Contract Documents for the City of Lemoore, Bush Street Overlay project.**

**REQUEST FOR INFORMATION – QUESTIONS AND RESPONSES**

1. *Please advise as to the structural section for bid item number 18, "Full Depth Reconstruction Pavement."*

   The design pavement section for the full-depth patching is as follows:
   AC: 6"
   AB: 12"

2. *What work is included in bid item number 15 "Furnish and Place Class 2 Aggregate Base"?*

   Bid Item 15 includes an estimated 325-cubic yard quantity, which is based on the 12" thickness of the aggregate base section for the full-depth pavement patching areas, including the pavement patching areas adjacent to the curb returns, ramps, and curb and gutter, as shown on the plans.

3. *Can you please post City of Lemoore standard details for the work involved?*

   Bid Items for curb, curb and gutter, ramps, drive approaches and sidewalk shall include all equipment, materials, and labor to construct the items complete and in-place including any aggregate base materials required. City of Lemoore Improvement Standards can be found at the following website: https://lemoore.com/wp-content/uploads/2020/08/City-of-Lemoore-2019-Stds_wLinks_8.4.20.pdf

4. *Will project traffic control or signage require a Caltrans permit?*

   The Traffic Control bid item (Bid Item 2) is for all traffic control required for the project. All construction will be performed within the project area and outside of the Caltrans right of way. However, the Contractor shall include any costs for traffic control and construction signage that may be required within Caltrans right of way including obtaining any required Caltrans permit. Traffic control requirements are specified in Section 400 of the Special Provisions section of the specifications Maintenance and Control of Traffic. Traffic Control for this project must always accommodate an eastbound lane from SR 41 along Bush Street.

5. *What DBE forms (Exhibit 12-B Part 1 & 2; Exhibit 15-G & Exhibit 15-H) are required at bid time?*

   DBE Forms Exhibit 12-B Part 1 and 2 and Exhibit 15-G are required at Bid Opening. Exhibit 15-H is due within five days of bid opening.

6. *What is the address location where we are to deliver the AC Grindings?*

The transport of the grindings shall be coordinated with the City Inspector. Pavement Grindings may be transported to either of the following locations:

City Wastewater Treatment Plant (1145 Vine Street)

City Well Site No. 7 (located on the west side of the City along Bush Street across the street from West Hills College)

7. *The legend says to dispose of existing pavement sections on Sheets 4 and 5 of the plans. What is the depth of the pavement and rock base section to be removed?*

Please assume that removal of the indicated pavement areas will consist of the following pavement section, for Bid purposes:

AC: 6"
AB: 12"

8. *Please confirm an Opinion of the Probable Construction Costs for this project:*

With the inclusions and updates noted herein, an updated cost range for project construction is $1,100,000 – $1,250,000.

**REVISIONS TO BID FORM:**

ITEM No. 1 BID FORM

- Replace Pages BC-12 through BC-16 with attached REVISED Page BC-12 through REVISED BC-16.

**REVISIONS TO SPECIFICATIONS:**

ITEM No. 1 REVISED BID CONDITIONS

- The bid opening time and date are changed to 2:00 p.m. on January 18, 2022.

ITEM No. 2 REVISED SPECIAL PROVISIONS – PART II CONSTRUCTION DETAILS

- Replace the SPECIAL PROVISIONS- PART II CONSTRUCTION DETAILS, pages CD-1 through CD-48 with the attached REVISED SPECIAL PROVISIONS- PART II CONSTRUCTION DETAILS, pages REVISED CD-1 through REVISED CD-48.

**REVISIONS TO DRAWINGS:**

ITEM No. 4 REVISED SHEET 3 OF 10 (DEMOLITION PLAN):

- Remove and replace Sheet 3 of 10 (Demolition Plan), with the attached revised Sheet 3 of 10 (Demolition Plan) dated 1/7/22.

**REVISION TO PREVAILING WAGE RATES:**

ITEM No. 5 GENERAL DECISION NUMBER CA20210018

- The updated Prevailing Wage Rates document, General Decision CA20210018 dated 12/24/2021, is attached.

**NOTE:** **One copy of this Addendum No. 2 shall be signed by the Contractor and must be submitted with the bid as acknowledgement of receipt of the acceptance of this Addendum No. 2.**

Prepared by: ______________________ January 7, 2022
Jeffery S. Cowart, P.E. Date
QK

Accepted by: ______________________ January 7, 2022
Contractor (signature) Date

# ADDENDUM NUMBER THREE

# FOR THE

# CITY OF LEMOORE

## BUSH STREET OVERLAY PROJECT
## HIP-5115(040)

January 13, 2021

**OWNER:**
**City of Lemoore**
**119 Fox Street**
**Lemoore, CA 93245**
**(559) 924-6700**

**PREPARED BY:**
**QK**
**901 E. Main Street**
**Visalia, CA 93292**
**(559) 733-0440**

200160

## ADDENDUM NUMBER THREE

**The following information, additions, deletions, or modifications shall become part of the Contract Documents for the City of Lemoore, Bush Street Overlay project.**

### REQUEST FOR INFORMATION – QUESTIONS AND RESPONSES

1. *Do you have an invert elevation for the lateral pipe going into the existing DI that is being reconstructed at approximately STA 16+00?*

   The invert elevation of the lateral pipe is not specified as part of the plans and is unknown.

2. *What is the scope of work for bid item 13 Adjust existing Storm Drain Inlet to grade? Do we need to repour the top of the DI?*

   The *Adjust Existing Storm Drain Inlet to Grade* Bid Item was removed with Addendum 2. The required storm drain inlet reconstruction is provided on the Addendum 2 Bid Item list as Bid Item 13. The existing DI shall be reconstructed, complete and in place, to ensure the drain inlet is reconstructed and integrated with the surrounding new concrete sidewalk and curb and gutter as shown on the plans.

3. *There is existing dike on the south side of Bush Street, are we grinding the dike off during the overlay or grinding next to it and leaving it? If we are grinding off do we need to replace it? If so how would it be paid?*

   The existing AC dike may remain and is not considered a part of grinding operations.

4. *The type A dike that is called out on sheet 5, how does that get paid?*

   The AC Dike was added to the Addendum 2 Bid Item list.

5. *The existing timber barricade on the south side of Bush at approximately STA 12+25. Do we need to remove and replace that or are we staying far enough away to where the paving will not affect it?*

   Removal and/or replacement of the existing timber barricade is not part of the project scope.

### REVISION TO PREVAILING WAGE RATES:

GENERAL DECISION NUMBER CA20220021

- The Prevailing Wage Rates document was updated as of January 7, 2022, as General Decision CA20220021. The document is attached with this Addendum 03.

**NOTE: One copy of this Addendum No. 3 shall be signed by the Contractor and must be submitted with the bid as acknowledgement of receipt of the acceptance of this Addendum No. 3.**

Prepared by:________________________ January 13, 2022
Jeffery S. Cowart, P.E. Date
QK

Accepted by:________________________ January 13, 2022
Contractor (signature) Date

# ADDENDUM NUMBER FOUR

# FOR THE

# CITY OF LEMOORE

## BUSH STREET OVERLAY PROJECT
## HIP-5115(040)

REGISTERED PROFESSIONAL ENGINEER
JEFFERY S. COWART
NO. 41964
CIVIL
STATE OF CALIFORNIA

January 17, 2021

**OWNER:**
**City of Lemoore**
**119 Fox Street**
**Lemoore, CA 93245**
**(559) 924-6700**

**PREPARED BY:**
**QK**
**901 E. Main Street**
**Visalia, CA 93292**
**(559) 733-0440**

200160

## ADDENDUM NUMBER FOUR

**The following information, additions, deletions, or modifications shall become part of the Contract Documents for the City of Lemoore, Bush Street Overlay project.**

**REQUEST FOR INFORMATION – QUESTIONS AND RESPONSES**

1. *Will the city please add a bid item for the relocate push button required to be performed per plan sheet 7, details M and N?*

   The City is providing a revised Bid List with this Addendum to provide a separate line item for furnishing all labor and materials for the relocation of the push buttons shown on the plans and in accordance with the Standard Specifications.

2. *Is the contractor responsible for providing a qc technician during paving operations, including ac plug paving, digouts, and overlay work?*

   The Contractor is responsible to ensure the project is completed according to City of Lemoore standards and meeting all requirements noted in the provided plans and specifications. The City will provide testing in accordance with Section 100.11 of the Special Provisions-Part II-Construction Details which includes testing during the paving operation.

3. *The specs state that the AB is to be bought, hauled, and placed in the concrete items. The AB for the digouts and ac plugs appear to be bought, hauled, and placed in the FDR pavement patch item (BI #19) If this is the case, then there is no need for an AB bid item (BI #15). Please clarify where the AB for the concrete and ac plugs and digouts are to be bought, hauled, and placed.*

   Bid Item 19, *Full-Depth Reconstruction Pavement Patch* includes in the contract price per square foot all labor, material and equipment to construct the pavement patch complete and in-place and therefor includes any aggregate base material required. The response to RFI #3 in Addendum #2 addresses the aggregate base materials required for the construction of various concrete work. Bid Item #15 is revised per this Addendum.

**REVISIONS TO BID FORM:**

ITEM No. 1 BID FORM

- Replace REVISED Pages BC-12 through REVISED BC-16 with attached ADD #4 REVISED Page BC-12 through ADD #4 REVISED BC-16.

**REVISIONS TO SPECIFICATIONS:**

ITEM No. 2 REVISED SPECIAL PROVISIONS – PART II CONSTRUCTION DETAILS

- Remove and replace the Bid Item description entitled, "**Total Bid-Item No. 15: Furnish and Place Class 2 Aggregate Base**" on REVISED Page CD-2 of the SPECIAL

PROVISIONS- PART II CONSTRUCTION DETAILS, with the following Bid Item description:

- **Total Bid – Item No. 15: Relocate Existing Pedestrian Push Button poles complete and in-place**

  This per each amount price paid for relocating existing pedestrian push button poles under ***"Relocate Existing Pedestrian Push Button poles complete and in-place"*** shall be considered as full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all work involved in relocating the existing pedestrian push button poles to the new location shown on the Plans including saw cutting, concrete footings, installing new conduit and cable, connections at pull box, connections to controller, and all other associated work necessary to provide fully functional and operational pedestrian push button poles as shown on the Plans and the Caltrans Standard Plans and as specified by the Caltrans Standard Specifications and these Specifications, and no additional allowance shall be made therefor.

**NOTE:** **One copy of this Addendum No. 4 shall be signed by the Contractor and must be submitted with the bid as acknowledgement of receipt of the acceptance of this Addendum No. 4.**

Prepared by: [signature] January 17, 2022
Jeffery S. Cowart, P.E. Date
QK

Accepted by: [signature] January 17, 2022
Contractor (signature) Date

February 11, 2022

Mr. Frank Rivera
Public Works Director
City of Lemoore
711 W. Cinnamon Drive
Lemoore, CA 93245

**Subject: Bush Street Overlay Project HIP-5115(040)**

Dear Mr. Rivera:

Bids for the City's Bush Street Overlay Project HIP-5115(040) were opened on January 18, 2022. The lowest bid received was from Terra West Construction, Inc., for the Total Bid amount of $849,867.00. The Engineer's Estimate for Total Bid is $1,239,092.36. Other bids received were:

| | |
|---|---|
| Cal Valley Construction | $934,996.55 |
| Agee Construction Corporation | $945,916.00 |
| Bush Engineering, Inc. | $947,461.00 |
| Avison Construction, Inc. | $956,061.00 |
| Don Berry Construction, Inc. | $1,027,723.10 |
| AJ Excavation, Inc. | $1,069,588.00 |
| Papich Construction, Inc. | $1,232,192.12 |

Terra West Construction, Inc. submitted a bid that was complete and in order. Their license is current, DIR registration is current, their DBE participation exceeded bid goal, and they and all subs are not on the debarred list excluding them from participation in federal aid contracts.

It is recommended, pending sufficient funds, that the City Council award the contract to Terra West Construction, Inc., for the Total Bid amount of $849,867.00.

Sincerely,

Jeffery Cowart, P.E.
City Engineer

Enclosures: Bid Proposal Summary

200160/04
wbe/JSC

# AGREEMENT BETWEEN OWNER AND CONTRACTOR

This Agreement, effective __________, 2022, is by and between City of Lemoore California, hereinafter called the "Owner" and Terra West Construction, Inc. hereinafter called the "Contractor."

**WITNESSETH:** That the Contractor and the Owner for the consideration hereinafter named agree as follows:

**ARTICLE I. SCOPE OF WORK.** The Contractor agrees to furnish all labor, equipment and materials, including tools, implements, and appliances required, and to perform all the Work in a good and workmanlike manner, free from any and all liens and claims from mechanics, material suppliers, subcontractors, artisans, machinists, teamsters, freight carriers, and laborers required for construction of the Bush Street Overlay (the “Project”) which runs East to West through the City of Lemoore, and includes an overlay of Bush Street between 19th and 19 1/2 Avenue. All work under this Agreement shall be in strict compliance with the plans, drawings, and specifications prepared by:

**Jeff Cowart, QK**
**901 E. Main Street**
**Visalia, CA 93292**
**(559) 733-0440**

and other Contract Documents relating thereto.

Unless otherwise specifically noted, the Contractor shall provide and pay for all labor, materials, equipment, transportation, and other facilities and services necessary for the proper execution and completion of the Project. The Contractor shall at all times enforce strict discipline and good order among Contractor’s employees and subcontractors and shall not employ on the Project anyone not skilled in the task assigned. Any employee of Contractor or employee of Contractor’s subcontractors, suppliers or material men Owner deems not skilled for the task assigned shall, upon Owner’s request, be dismissed from the site.

During the Work, the Contractor shall ensure that all Work, including but not limited to Work performed by Subcontractors, is performed in compliance with all applicable legal, contractual, and local government requirements related to the novel coronavirus and COVID-19, including “social distancing,” masks, and hygiene as may be ordered by the State or local authorities and as may be directed in the Contract Documents.

**ARTICLE II. CONTRACT DOCUMENTS.** The Contractor and the Owner agree that all of the documents listed in Article 1.1.1 of the General Conditions (attached as **Exhibit A)** form the Contract Documents which form the Contract.

**ARTICLE III. TIME TO COMPLETE AND LIQUIDATED DAMAGES.**

Time is of the essence in this Contract, and the time of Completion for the Work ("the Contract Time") shall be forty-five (45) working days which shall start to run on (a) the date of commencement of the Work as established in the Owner's Notice to Proceed, or (b) if no date of commencement is established in a Notice to Proceed from Owner, the date of Contractor's actual commencement of the Work (including mobilization).

Failure to Complete the Work within the Contract Time and in the manner provided for by the Contract Documents, or failure to complete any specified portion of the Work by a milestone deadline, shall subject the Contractor to liquidated damages. The actual occurrence of damages and the actual amount of the damages which the Owner would suffer if the Work were not Completed within the Contract Time, or if any specified portion of the Work were not completed by a milestone deadline, are dependent upon many circumstances and conditions which could prevail in various combinations and, from the nature of the case, it is impracticable and extremely difficult to fix the actual damages. Damages which the Owner would suffer in the event of such delay include, but are not limited to, loss of the use of the Work, disruption of activities, costs of administration and supervision, third party claims, and the incalculable inconvenience and loss suffered by the public.

Accordingly, the parties agree that one thousand ($1,000) dollars per calendar day of delay shall be the damages which the Owner shall directly incur upon failure of the Contractor to Complete the Work within the Contract Time or Complete any specified portion of the Work by a milestone deadline, as described above. Liquidated damages will accrue for failure to meet milestone deadlines even if the Contractor Completes the Work within the Contract Time.

In addition, to the extent applicable, Contractor shall be subject to liquidated damages, or actual damages if liquidated damages are not recoverable under law, for causing another contractor on the Project to fail to timely complete its work under its contract or for causing delayed *completion* of the Project. The actual occurrence of damages and the actual amount of the damages which the Owner would suffer if another contractor on the Project were to fail to timely complete its work under its contract or delay *completion* of the Project are dependent upon many circumstances and conditions which could prevail in various combinations and, from the nature of the case, it is impracticable and extremely difficult to fix the actual damages. Damages which the Owner would suffer in the event of such delay include, but are not limited to, loss of the use of the Work, loss of use of the other contractor's work, loss of use of the Project, disruption of activities, costs of administration and supervision, third party claims, the incalculable inconvenience and loss suffered by the public, and an Owner's inability to recover its delay damages from the contractors whose work was delayed by Contractor.

Accordingly, the parties agree that one thousand ($1,000) dollars for each calendar day of delay shall be the amount of damages which the Owner shall directly incur upon Contractor causing another contractor on the Project to fail to timely complete its work under its contract or causing delayed *completion* of the Project.

For Contractor's obligations regarding claims against Owner from other contractors on the Project alleging that Contractor caused delays to their work, see General Conditions sections 3.7.4, 3.16, 6.2.3, and 6.2.4.

If liquidated damages accrue as described above, the Owner, in addition to all other remedies provided by law, shall have the right to assess the liquidated damages at any time, and to withhold liquidated damages (and any interest thereon) at any time from any and all retention or progress payments, which would otherwise be or become due the Contractor. In addition, if it is reasonably apparent to the Owner before liquidated damages begin to accrue that they will accrue, Owner may assess and withhold, from retention or progress payments, the estimated amount of liquidated damages that will accrue in the future. If the retained percentage or withheld progress payments are not sufficient to discharge all liabilities of the Contractor incurred under this Article, the Contractor and its sureties shall continue to remain liable to the Owner until all such liabilities are satisfied in full.

If Owner accepts any work or makes any payment under the Contract Documents after a default by reason of delays, the payment or payments shall in no respect constitute a waiver or modification of any provision in the Contract Documents regarding time of Completion, milestone deadlines, or liquidated damages.

**ARTICLE IV. PAYMENT AND RETENTION.** The Owner agrees to pay the Contractor in current funds eight hundred forty-nine thousand, eight hundred sixty-seven dollars ($849,867.00) for work satisfactorily performed after receipt of properly documented and submitted Applications for Payment and to make payments on account thereof, as provided in the General Conditions.

The above contract price does not include any special allowances.

**ARTICLE V. CHANGES.** Changes in this Agreement or in the Work to be done under this Agreement shall be made as provided in the General Conditions Art. 7.

**ARTICLE VI. TERMINATION.** The Owner or Contractor may terminate the Contract as provided in the General Conditions Art. 14.

**ARTICLE VII. PREVAILING WAGES.** The Project is a public work, the Work shall be performed as a public work and pursuant to the provisions of Section 1770 et seq. of the Labor Code of the State of California, which are hereby incorporated by reference and made a part hereof, the Director of Industrial Relations has determined the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work in the locality in which the Work is to be performed, for each craft, classification or type of worker needed to execute this Contract. Per diem wages shall be deemed to include employer payments for health and welfare, pension, vacation, apprenticeship or other training programs, and similar purposes. Copies of the rates are on file at the Owner's principal office. The rate of prevailing wage for any craft, classification or type of workmanship to be employed on this Project is the rate established by the applicable collective bargaining agreement which rate so provided is hereby adopted by reference and shall be effective for the life of this Agreement or until the Director of the Department of Industrial Relations determines that another rate be adopted. It shall be mandatory upon the Contractor and on any subcontractor to pay not less than the said specified rates to all workers employed in the execution of this Agreement.

The Contractor and any subcontractor under the Contractor as a penalty to the Owner shall forfeit not more than Two Hundred Dollars ($200.00) for each calendar day or portion thereof for each worker paid less than the stipulated prevailing rates for such work or craft in which such worker is employed. The difference between such stipulated prevailing wage rates and the amount paid to each worker for each calendar day or portion thereof for which each worker was paid less than the stipulated prevailing wage rate shall be paid to each worker by the Contractor.

The Contractor and each Subcontractor shall keep or cause to be kept an accurate record for Work on this Contract and Project showing the names, addresses, social security numbers, work classification, straight time and overtime hours worked and occupations of all laborers, workers and mechanics employed by them in connection with the performance of this Contract or any subcontract thereunder, and showing also the actual per diem wage paid to each of such workers, which records shall be open at all reasonable hours to inspection by the Owner, its officers and agents and to the representatives of the Division of Labor Standards Enforcement of the State Department of Industrial Relations. The Contractor and each subcontractor shall furnish a certified copy of all payroll records directly to the Labor Commissioner at least monthly.

Public works projects shall be subject to compliance monitoring and enforcement by the Department of Industrial Relations. For all projects over Twenty-five Thousand Dollars ($25,000), a contractor or subcontractor shall not be qualified to submit a bid or to be listed in a bid proposal subject to the requirements of Public Contract Code section 4104 unless currently registered and qualified under Labor Code section 1725.5 to perform public work as defined by Division 2, Part 7, Chapter 1 (§§ 1720 et seq.) of the Labor Code. For all projects over Twenty-five Thousand Dollars ($25,000), a contractor or subcontractor shall not be qualified to enter into, or engage in the performance of, any contract of public work (as defined by Division 2, Part 7, Chapter 1 (§§ 1720 et seq.) of the Labor Code) unless currently registered and qualified under Labor Code section 1725.5 to perform public work.

**ARTICLE VIII. WORKING HOURS.** In accordance with the provisions of Sections 1810 to 1815, inclusive, of the Labor Code of the State of California, which are hereby incorporated and made a part hereof, the time of service of any worker employed by the Contractor or a Subcontractor doing or contracting to do any part of the Work contemplated by this Agreement is limited and restricted to eight hours during any one calendar day and forty hours during any one calendar week, provided, that work may be performed by such employee in excess of said eight hours per day or forty hours per week provided that compensation for all hours worked in excess of eight hours per day, and forty hours per week, is paid at a rate not less than one and one-half (1½) times the basic rate of pay. The Contractor and every Subcontractor shall keep an accurate record showing the name of and the actual hours worked each calendar day and each calendar week by each worker employed by them in connection with the Work. The records shall be kept open at all reasonable hours to inspection by representatives of the Owner and the Division of Labor Standards Enforcement. The Contractor shall as a penalty to the Owner forfeit Twenty-five Dollars ($25.00)for each worker employed in the execution of this Agreement by the Contractor or by any subcontractor for each calendar day during which such

worker is required or permitted to work more than eight hours in any one calendar day, and forty hours in any one calendar week, except as herein provided.

**ARTICLE IX. APPRENTICES.** The Contractor agrees to comply with Chapter 1, Part 7, Division 2, Sections 1777.5 and 1777.6 of the California Labor Code, which are hereby incorporated and made a part hereof. These sections require that contractors and subcontractors employ apprentices in apprenticeable occupations in a ratio of not less than one hour of apprentice's work for each five hours of work performed by a journeyman (unless an exemption is granted in accordance with Section 1777.5) and that contractors and subcontractors shall not discriminate among otherwise qualified employees as indentured apprentices on any public works solely on the ground of sex, race, religious creed, national origin, ancestry or color. Only apprentices as defined in Labor Code Section 3077, who are in training under apprenticeship standards and who have signed written apprentice agreements, will be employed on public works in apprenticeable occupations. The responsibility for compliance with these provisions is fixed with the Contractor for all apprenticeable occupations.

**ARTICLE XI. INDEMNIFICATION AND INSURANCE.** The Contractor will defend, indemnify and hold harmless the Owner, its governing board, officers, agents, trustees, employees and others as provided in the General Conditions.

By this statement the Contractor represents that it has secured the payment of Workers' Compensation in compliance with the provisions of the Labor Code of the State of California and during the performance of the work contemplated herein will continue so to comply with said provisions of said Code. The Contractor shall supply the Owner with certificates of insurance evidencing that Workers' Compensation Insurance is in effect and providing that the Owner will receive thirty (30) days' notice of cancellation.

Contractor shall provide the insurance set forth in the General Conditions. The amount of general liability insurance shall be $2,000,000.00 per occurrence for bodily injury, personal injury and property damage, $2,000,000.00 in the aggregate, and the amount of automobile liability insurance shall be $1,000,000 per accident for bodily injury and property damage combined single limit.

**ARTICLE XII. COMPLIANCE WITH LAW.** While performing the services contemplated by this Agreement, Contractor agrees to comply with all applicable laws and regulations. Contractor understands and acknowledges that the purchase is being funded through a Federal Award and that, as a result, the Agreement is subject to applicable Federal law. Contractor agrees to comply with all such requirements, including but not limited to those set forth in Exhibit A.

**ARTICLE XII**. **ENTIRE AGREEMENT.** The Contract constitutes the entire agreement between the parties relating to the Work and supersedes any prior or contemporaneous agreement between the parties, oral or written, including the Owner's award of the Contract to Contractor, unless such agreement is expressly incorporated herein. The Owner makes no representations or warranties, express or implied, not specified in the Contract. The Contract is intended as the complete and exclusive statement of the parties' agreement pursuant

to Code of Civil Procedure section 1856.

**ARTICLE XIII. EXECUTION OF OTHER DOCUMENTS.** The parties to this Agreement shall cooperate fully in the execution of any and all other documents and in the completion of any additional actions that may be necessary or appropriate to give full force and effect to the terms and intent of the Contract.

**ARTICLE XIV. EXECUTION IN COUNTERPARTS.** This Agreement may be executed in counterparts such that the signatures may appear on separate signature pages. A copy, or an original, with all signatures appended together, shall be deemed a fully executed Agreement.

**ARTICLE XV. BINDING EFFECT.** Contractor, by execution of this Agreement, acknowledges that Contractor has read this Agreement and the other Contract Documents, understands them, and agrees to be bound by their terms and conditions. The Contract shall inure to the benefit of and shall be binding upon the Contractor and the Owner and their respective successors and assigns.

**ARTICLE XVI. SEVERABILITY; GOVERNING LAW; CHOICE OF FORUM.** If any provision of the Contract shall be held invalid or unenforceable by a court of competent jurisdiction, such holding shall not invalidate or render unenforceable any other provision hereof. The Contract shall be governed by the laws of the State of California. Any action or proceeding seeking any relief under or with respect to this Agreement shall be brought solely in the Superior Court of the State of California for the County of Fresno, subject to transfer of venue under applicable State law, provided that nothing in this Agreement shall constitute a waiver of immunity to suit by Owner.

**ARTICLE XVII. AMENDMENTS.** The terms of the Contract shall not be waived, altered, modified, supplemented or amended in any manner whatsoever except by written agreement, including change orders, signed by the parties and approved or ratified by the Governing Board.

**ARTICLE XVIII. ASSIGNMENT OF CONTRACT.** The Contractor shall not assign or transfer by operation of law or otherwise any or all of its rights, burdens, duties or obligations without the prior written consent of the surety on the payment bond, the surety on the performance bond and the Owner.

**ARTICLE XIX. WRITTEN NOTICE.** Written notice shall be deemed to have been duly served if delivered in person to the individual or member of the firm or to an officer of the corporation for whom it was intended, or if delivered at or sent by registered or certified or overnight mail to the last business address known to the person who gives the notice.

| | |
|---|---|
| **CONTRACTOR** | **OWNER** |
| **Terra West Construction** | **City of Lemoore** |

___________________________ ___________________________

________________ (*Name*) _____________________ (*Name*)

_______ (Chairman, Pres., or Vice-Pres.) _____________________ (*Title*)

___________________________

________________ (*Name*)

________ (Secretary, Asst. Secretary, CFO, or Asst. Treasurer)

____________________________

CALIFORNIA CONTRACTOR'S
LICENSE NO.

___________________________

LICENSE EXPIRATION DATE

**NOTE:** Contractor must give the full business address of the Contractor and sign with Contractor's usual signature. Partnerships must furnish the full name of all partners and the Agreement must be signed in the partnership name by a general partner with authority to bind the partnership in such matters, followed by the signature and designation of the person signing. The name of the person signing shall also be typed or printed below the signature. Corporations must sign with the legal name of the corporation, followed by the name of the state of incorporation and by the signature and designation of the chairman of the board, president or any vice president, and then followed by a second signature by the secretary, assistant secretary, the chief financial officer or assistant treasurer. All persons signing must be authorized to bind the corporation in the matter. The name of each person signing shall also be typed or printed below the signature. Satisfactory evidence of the authority of the officer signing on behalf of a corporation shall be furnished.

# CITY OF LEMOORE

## BUDGET AMENDMENT FORM

| Date: | 4/28/2022 | Request By: | Randon Reeder |
|---|---|---|---|
| Requesting Department: | Public Works | | |

## TYPE OF BUDGET AMENDMENT REQUEST:

- [x] Appropriation Transfer within Budget Unit
- [ ] All other appropriations (Attach Council approved Staff Report)

## FROM:

| Fund | Budget Unit | Account | Current Budget | Proposed Increase/Decrease: | Proposed New Budget |
|---|---|---|---|---|---|
| 027 | | 1010 | Reserves | $ (240,000.00) | $ (240,000.00) |
| 403 | 5013 | 4310 | $ 910,000.00 | $ (695,000.00) | $ 215,000.00 |
| | | | | | $ - |
| | | | | | $ - |

## TO:

| Fund | Budget Unit | Account | Current Budget | Proposed Increase/Decrease: | Proposed New Budget |
|---|---|---|---|---|---|
| 403 | 5013 | 4317 | $ - | $ 935,000.00 | $ 935,000.00 |
| | | | | | $ - |
| | | | | | $ - |
| | | | | | $ - |
| | | | | | $ - |
| | | | | | $ - |

## JUSTIFICATION FOR CHANGE/FUNDING SOURCE:

Reallocating to cover expenses for project management, engineering and anticipated contingencies.

## APPROVALS:

| Department Head: | Date: |
|---|---|
| City Manager: | Date: |
| | |
| Completed By: | Date: |

City of
LEMOORE
CALIFORNIA

711 West Cinnamon Drive ● Lemoore, California 93245 ● (559) 924-6744

# Staff Report

**Item No: 4-1**

**To:** **Lemoore City Council**

**From** **Nathan Olson, City Manager**

**Date:** **April 20, 2022** **Meeting Date: May 3, 2022**

**Subject:** **Project Development Agreement and Cannabis Regulatory Permit between the City of Lemoore and Pacific Plant Sciences, INC. for Cannabis Operations**

**Strategic Initiative:**

| | |
|---|---|
| ☐ Safe & Vibrant Community | ☒ Growing & Dynamic Economy |
| ☒ Fiscally Sound Government | ☐ Operational Excellence |
| ☐ Community & Neighborhood Livability | ☐ Not Applicable |

**Proposed Motions:**
Conclude the consideration of a Project Development Agreement ("PDA") attached as Exhibit "A" and a Cannabis Regulatory Permit proposed by and between the City of Lemoore and Pacific Plant Sciences, INC. (Developer). Authorize City Manager, or designee, to sign PDA and issue Cannabis Regulatory Permit.

**Background:**
At the October 6, 2020 Council meeting, Council held the public hearing and closed the public portion. During Council deliberation the item was continued to this meeting for action.

**Subject/Discussion:**
Ordinance 2019-03 went into effect August 2, 2019. Per the Ordinance, no person or entity can operate a Commercial Cannabis Operation within city limits without obtaining a Regulatory Permit and entering into a PDA. The Developer has successfully completed the application process and all required background checks.

Developer proposes to operate a commercial cannabis cultivation and related agricultural-manufacturing, processing, non-store front delivery and distribution. The Developer has requested, and staff is recommending that the PDA include a provision

providing the Developer with a vested right to proceed with the proposed land uses consistent with all applicable laws currently in place. The PDA reserves the right to apply any federal, state, county legal changes or local actions necessary to protect the public health and safety.

The proposed agricultural uses are deemed exempt from the California Environmental Quality Act (CEQA) under the general rule where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment CEQA Guidelines Section15061(b)(3).

**Financial Consideration(s):**

Cannabis Fees:
Pacific Plant Sciences will be responsible for the following fees:

1. Cultivation- A minimum annual fee of six dollars ($6.00) per square-foot of canopy for the first 25,000 square feet of Canopy. Three dollars ($3.00) per square foot for the next 25,001 to 50,000 square feet of 'Canopy'; Two dollars ($2.00) per square foot for the next 50,001 to 450,000 square feet. One dollar ($1) for any additional square feet of 'Canopy'. Nursery fee shall be two dollars ($2.00) per square foot of canopy.

2. Distribution: The Revenue Raising Fee shall equal one percent (1%) of Gross Receipts generated from distribution of third party products.

3. Manufacturing: A Flat fee of Forty-Five Thousand Dollars ($45,000.00) annually.

4. Non store front delivery- 5% of gross receipts.

**Alternatives or Pros/Cons:**
Pros:
- Economic benefits through tax and fee generation
- Job creation
- Potential stimulation of future growth

Cons:
- Public Perception

**Commission/Board Recommendation:**
Not Applicable.

**Staff Recommendation:**
Staff recommends concluding Council deliberation and upon closing of the public hearing, adopting the PDA and directing City Manager, or designee, to sign the PDA and issue a Cannabis Regulatory Permit proposed by and between the City of Lemoore and Pacific Plant Sciences, INC.

| **Attachments:** | **Review:** | **Date:** |
|---|---|---|
| ☐ Resolution: | ☒ Asst. City Manager | 04/25/2022 |
| ☐ Ordinance: | ☒ City Attorney | 04/28/2022 |
| ☐ Map | ☒ City Clerk | 04/28/2022 |
| ☐ Contract | ☒ City Manager | 04/28/2022 |
| ☐ Other | ☒ Finance | 04/27/2022 |
| List: Project Development Agreement | | |

# PROJECT DEVELOPMENT AGREEMENT BETWEEN

# THE

# CITY OF LEMOORE, AND

# PACIFIC PLANT SCIENCES, INC.

# DEVELOPMENT AGREEMENT

This Project Development Agreement ("**Agreement**") is entered into ("**Effective Date**") between the City of Lemoore, a California charter city ("**the City**"), and Pacific Plant Sciences, Inc. ("**Developer**"), with respect to the following Recitals, which are a substantive part of this Agreement:

**RECITALS**

This Agreement is predicated upon the following facts:

A. Landowner is the owner of certain real property ("Property") at
1356 W. Iona Avenue, Lemoore, CA 93245
APN:023-310-001
Approximately 4.25 acres

B. On June 18, 2019, the Lemoore City Council, in accordance with the State of California's Medicinal and Adult-Use Cannabis Regulation and Safety Act ("**MAUCRSA**" or the "**Act**") approved the introduction (first reading) of Ordinance No. 2019-03 ("**Ordinance**") to amend the Lemoore Municipal Code relating to Cannabis as follows: Title 4, Chapter 8 – Cannabis, to allow for and to regulate Commercial Cannabis Operations; Title 9, Chapter 4, Section 9-4a-5, to conform certain land use definitions to State law; Title 9, Chapter 4, Section 9-4b-2, to clarify Medicinal and add Commercial Cannabis activities in designated zones; and Title 9, Chapter 4, Section 9-4d-3, to clarify that Cannabis activities are prohibited in Community Gardens. The City Council also approved Zoning Text Amendment No. 2019-01. The City Council waived the reading of the Ordinance in its entirety and set the second hearing on the Ordinance for the Council's next regular meeting on July 2, 2019.

C. On July 2, 2019, the Lemoore City Council adopted the Ordinance at a duly-noticed public hearing. By law, the Ordinance will take effect on August 2, 2019.

D. Under this Agreement, Landowner proposes to lease the Property ("**Subject Property**") to Developer, and Developer proposes to provide improvements to the existing structure and additional construction to be built on the Subject Property to meet specifications for a Commercial Cannabis Operation in accordance with MAUCRSA and the Ordinance. Additionally, Developer proposes to utilize the Subject Property On APN:023-310-001, Developer proposes to operate a cannabis nursery, cultivation operation, processing operation, manufacturing facility, edibles kitchen, infusion and bottling facility, distribution, non-retail delivery service, and venue to hold private events. Developer will process, manufacture, and distribute for their own brand as well as several established brands, similar to a produce packing house operation. Developer further proposes to utilize the subject property and facilities thereon, within premises separate and distinct from the proposed commercial cannabis operations, for processing Industrial Hemp as a legal Agricultural Commodity under H.R. 5485 Congress (2017-2018), commonly known as the 2018 Farm Bill, and subsequently promulgated law in the State of California.

E. It is the intent of the parties that this Agreement is contingent upon Developer obtaining a Commercial Cannabis regulatory permit ("**Regulatory Permit**") on the Subject Property pursuant to the Ordinance. Landowner and Developer acknowledge that nothing in this Agreement is intended to or shall operate to pre-commit City's discretion with respect to required land use or other entitlements, permits, and approvals, including, without limitation, interpreting, enforcing or amending the Ordinance and issuing, monitoring or revoking the Regulatory Permit for the Developer's proposed use of the Property consistent with the Ordinance (hereinafter the "**Project**").

F. Developer represents that it is an experienced developer and/or operator of commercial cannabis operations or has otherwise contracted with experienced commercial developers, operators, contractors, and other professionals for the purposes of developing the Project on the Subject Property. Developer acknowledges that it be responsible for all improvements to the Subject Property necessary for the Project.

G. Developer represents its intention to hire City residents whenever practicable to work in its commercial cannabis operations, and City encourages Developer to hire locally.

**NOW, THEREFORE**, pursuant to the authority contained in the California's Development Agreement statutes (Government Code section 65864, et seq,), enacted pursuant to Article Xl, Section 2 of the California Constitution, and in consideration of the foregoing recitals of fact, all of which are expressly incorporated into this Agreement, the mutual covenants set forth in this Agreement, the City, Landowner, and Developer agree as follows:

I. <u>Development of Subject Property</u>. Developer proposes to use the Subject Property for a Commercial Cannabis Operation to the maximum extent allowed under MAUCRSA and the Ordinance, which includes both medical and adult use for nursery, cultivation, processing, manufacturing, distribution, non-storefront delivery. Developer further proposes to use the Subject Property for Industrial Hemp Processing Operations in accordance all applicable State and Federal laws and regulations. For this to happen, City must approve a Regulatory Permit. The exact Commercial Cannabis Operation to be approved for the Subject Property will be determined during the Regulatory Permit process, but shall be consistent with the terms and conditions of this Agreement.

II. <u>Lawfulness of Activities</u>. In entering into this Agreement and processing the Regulatory Permit, the City makes no guarantees or promises as to the lawfulness of the proposed commercial cannabis operations under State or federal law, and Developer is obligated to comply with all applicable laws. To the fullest extent permitted by law, City shall not assume any liability whatsoever with respect to approving the Ordinance, a Regulatory Permit for Developer, or any other commercial cannabis operation approved by City.

III. <u>Developer Representations</u>. Developer represents and warrants that Developer, and/or principal members of Developer, is/are an experienced developer and operator of commercial properties with experience in cannabis operations, or has otherwise contracted with experienced commercial developers, architects, and/or other professionals for the purpose of developing the Property. The qualifications and identity of Developer and Developer's contractors are of

particular concern to City, and because of such qualifications and identity, the City has entered into this Agreement with Developer. City has considered and relied upon Developer's representations and warranties in entering into this Agreement.

IV. Landowner Representations. Landowner represents and warrants that Landowner, in leasing the Subject Property to Developer for purposes of this Agreement, will not be in breach of any of its obligations under the City/Landowner PIA. Nothing in this Agreement shall be construed as a waiver by the City of any of its rights and remedies under the City/Landowner PIA, including, but not limited to, the reversion of reversion.

V. Fees and Taxes. Developer shall pay to City the following fees and taxes:

A. Customary business license fees and any regulatory permit fee that may be required as part of the Ordinance and Regulatory Permit.

B. An annual revenue raising fee for the privilege of having the right to conduct a commercial cannabis operation in the City ("**Revenue Raising Fee**"). The Revenue Raising Fee shall be:

1. Cultivation and other uses not specifically described below. A minimum annual fee of six dollars ($6.00) per square-foot of canopy for the first 25,000 square feet for Developer's commercial cannabis cultivation operations in the City, relative to the productive space, otherwise known as 'Canopy' as defined by the California Department of Food and Agriculture; three dollars ($3.00) per square foot for the next 25,001 to 50,000 square feet of 'Canopy'; two dollars ($2.00) per square foot for the next 50,001 to 450,000 square feet and one dollar ($1) for any additional square feet of 'Canopy'. Nursery fee shall be two dollars ($2.00) per square foot of canopy. This square foot calculation shall be used if Developer is cultivating on multiple levels within the same square footage footprint. Otherwise, the cubic foot calculation shall be identical to the square footage being used by Developer, less the square footage excluded from inclusion as described herein. The square footage calculation shall be determined by including all portions of the Premises under the control of the Developer or an Affiliate Entity (as defined in Section 7, subsection C), and deducting therefrom nursery operations ("**Nursery**"), which is defined as square footage inhabited by clones, immature plants (non-flowering cannabis plants), seeds, and other agricultural products used specifically for the propagation and cultivation of cannabis), processing ("**Processing**"), which is defined as activities associated with drying, curing, grading, trimming, storing, packaging, and labeling of non-manufactured cannabis products, driveways, sidewalks, landscaping, vacant unused space, areas used exclusively for office space, employee break rooms, restrooms, and storage space unrelated to the commercial cannabis operation (such as a janitorial closet), as well as space used for ingress and egress within Cultivation areas. The total under-canopy square footage shall be included in the square footage calculation. The term "**Canopy**" is defined pursuant to MAUCRSA and implementing regulations in existence at the time of execution of this Agreement. In the event Developer or an Affiliate Entity acquires real property in the City in addition to the Property to operate commercial cannabis operations, any additional square footage of the commercial cannabis operations on such additional real property shall be added to the square footage of the Property for purposes of calculating the Revenue Raising Fee pursuant to this subdivision (A)(1). If such additional property is added to the square footage of the then-

current Regulatory Permit, Developer shall amend the Regulatory Permit to incorporate it.

2. Distribution: In addition to subdivision (B)(1) above, the Revenue Raising Fee shall equal one percent (1%) of Gross Receipts generated from distribution of third party products.

a. The term "Gross Receipts," for purposes of computing the Revenue Raising Fee, shall exclude any payments made to Developer by an Affiliate Entity (as defined herein), but shall include any and all revenues generated from the Affiliate Entity's sale of cannabis or cannabis products to another State or local licensed or permitted cannabis business.

3. Manufacturing: A Flat fee of Forty-Five Thousand Dollars ($45,000.00) per year

4. Non-Storefront Delivery Activities: Five percent (5%) of gross receipts.

5. The parties agree that every three (3) years (beginning from the date on which the Regulatory Permit is first issued), the parties will renegotiate the Revenue Raising Fee and the required payments, and all parties hereby agree that they will exert their best efforts to negotiate this term in good faith, with the joint goal of making the business activities described herein sustainable in the State, and therefore a consistent and reliable source of funds for the City to be approved by City Council.

6. Developer agrees to pay the Revenue Raising Fee as determined by comparing subsections (B)(1) and (B)(2) of this Section V.

7. Payments of the Revenue Raising Fee shall occur quarterly, and all payments shall be received by the City no later than thirty (30) days following the end of the quarter to which the fees are applied. The parties hereby agree that the first Revenue Raising Fee Payment shall be due in the next fiscal quarter trailing the fiscal quarter in which Operations commence on site.

8. In the even that City passes a cannabis tax of any form or amount, the City agrees that the tax will not apply to Developer, and Developer is bound to pay only the Revenue Raising Fee pursuant to this Section V in lieu of a cannabis tax.

C. If a commercial cannabis operation not owned or controlled by Developer or its principals operates on the Property, such operation shall be required to obtain a Regulatory Permit, and each new Regulatory Permit holder shall be responsible for paying the Revenue Raising Fees set forth in subsections A1 and A2 of this Section 4 above separately from Developer. No change to Developer's entity status or change in ownership of Developer shall require Developer to obtain a new Regulatory Permit, except that a change in ownership that constitutes a change in control of Developer (*i.e.*, a change in ownership that results in one person or entity owning more than 50 percent of the ownership interest) shall require Developer to obtain a new Regulatory Permit before the change in ownership takes place.

D. The requirements of this Section V. shall be a recordable covenant running with the land and binding on all owners, tenants, and Regulatory Permit holders for the Property.

VI. Compliance with Laws. Developer shall operate the Commercial Cannabis Operation in conformity MAUCRSA and any implementing regulations, as they may be amended from time to

time. Developer shall comply with all other applicable laws, state labor standards, City zoning and development standards, building, plumbing, mechanical and electrical codes, all other provisions of the Lemoore Municipal Code, and all applicable disabled and handicapped access requirements, including without limitation the Americans With Disabilities Act, 42 U.S.C. Section 12101, *et seq*., California Government Code Section 4450, *et seq*., California Government Code Section 11135, *et seq*., and the Unruh Civil Rights Act, Civil Code Section 51, *et seq*. with respect to the existing and any proposed improvements on the Subject Property. As for the California Environmental Quality Act ("CEQA"), compliance with CEQA will be evaluated by the City during the Site Plan Review process.

VII. <u>Indemnity</u>.

A. <u>Commercial Cannabis Operations</u>. Developer shall defend, indemnify, assume all responsibility for, and hold City and its officers, agents, employees, and volunteers, harmless from all claims, demands, damages, defense costs or liability of any kind or nature arising from or related to any State or federal law enforcement action against Landowner or Developer, Landowner's or Developer's tenants, subtenants, licensees, contractors and employees ("**Landowner/Developer Parties**") in connection with the commercial cannabis operation conducted on the Subject Property after Closing ("**Cannabis Claims**"). Developer's indemnity shall not extend to any loss of revenue suffered or incurred by City in connection with any termination, cessation, restriction, seizure, or other limitation of any commercial cannabis operation on the Property.

B. <u>Construction and Other Operations</u>. In addition to the indemnity obligations contained herein, Landowner and Developer shall defend, indemnify, assume all responsibility for, and hold City and its officers, agents, employees, and volunteers, harmless from all claims, demands, damages, defense costs or liability of any kind or nature relating to the subject matter of this Agreement or the implementation thereof, including all construction and operation activities on the Project, and for any damages to property or injuries to persons, including accidental death (including attorneys' fees and costs), which may be caused by any acts or omissions of Developer Parties in the performance under this Agreement, whether such damage shall accrue or be discovered before or after termination of this Agreement ("**Other Claims**"). Notwithstanding the foregoing, neither Landowner nor Developer shall be liable under this section for any property damage or bodily injury is caused by the sole negligence or willful misconduct of the City or its agents or employees.

VIII. <u>Restrictions on Transfer</u>.

A. <u>Assignee Obligations</u>. In the absence of specific written agreement by City, no assignment or transfer by Developer of all or any portion of its rights shall be deemed to relieve it or any successor party from any obligations under this Agreement. In addition, no attempted assignment of any of Developer's obligations hereunder shall be effective unless and until the successor party executes and delivers to City an assumption agreement in a form reasonably approved by the City assuming such obligations. Such approval by City shall be evaluated in good faith and shall not be unreasonably withheld upon Developer's proposed assignment to an otherwise qualified assignee.

B. Affiliate Entities. Notwithstanding the foregoing restrictions on transfer, the Developer may enter into written contracts with one or more "**Affiliate Entities**," which are defined as entities that are owned or controlled by Developer or its principals to conduct commercial cannabis operations in the City pursuant to the Regulatory Permit, and other entities or individuals with which Developer contracts to conduct business pursuant to the Regulatory Permit. Developer may enter into these written contracts with or without the prior written consent of the City, which will not be unreasonably withheld. In addition, any such Affiliate Entity shall be required to sign a written agreement agreeing to be bound and subject to the terms and conditions of this Agreement.

IX. Defaults and Remedies. Failure by either party to perform any action or covenant required by this Agreement within the time periods provided herein following notice and failure to cure as described hereafter, constitutes a "**Default**" under this Agreement. A party claiming a Default shall give written Notice of Default ("**Notice**") to the other party specifying the Default complained of. Except as otherwise expressly provided in this Agreement, the claimant shall not institute any proceeding against any other party, and the other party shall not be in Default if such party within fifteen (15) days from receipt of such Notice immediately, with due diligence, commences to cure, correct or remedy such failure or delay and shall diligently complete such cure, correction or remedy.

In addition to any other rights or remedies and subject to the restrictions otherwise set forth in this Agreement, either party may institute an action at law or equity to seek specific performance of the terms of this Agreement, or to cure, correct or remedy any Default, to recover damages for any Default, or to obtain any other remedy consistent with the purpose of this Agreement. Such legal actions must be instituted in the Superior Court of the County of Kings, California, or in the United States District Court for the Eastern District of California – Fresno Division, if allowable.

X. Term

The term of this Agreement shall be for twenty-five (25) years, with an optional fifteen (15) year extension.

XI. General Provisions.

A. Notices, Demands and Communications between the Parties. Any approval, disapproval, demand, document or other notice ("Notice") which either party may desire to give to the other party under this Agreement must be in writing and may be given by any commercially acceptable means to the party to whom the Notice is directed at the address of the party as set forth below, or at any other address as that party may later designate by Notice.

To City: Nathan Olson
City Manager
711 W. Cinnamon Drive
Lemoore, CA 93245

(559) 924-6744 ext. 700

With a copy to: Mary Lerner, City Attorney
Lozano Smith
7404 N. Spalding
Fresno, California 93720
Tel: (559) 431-5600
Fax: (559) 431-4420
Email: mlerner@lozanosmith.com

To Landowner: _________________________
_________________________, LP
_________________________
_________________________
Tel: (___) ___-____
Fax: (___) ___-____
Email:

With a copy to:

To Developer: _________________________
_________________________, LLC
_________________________
_________________________
Tel: (___) ___-____
Fax: (___) ___-____
Email:

With a copy to:

Any written notice, demand or communication shall be deemed received: immediately if delivered by hand; 24 hours after delivery to a receipted, overnight delivery service such as Federal Express; 24 hours after delivery by e-mail with an acknowledgement of receipt by the intended recipient; and on the fourth (4th) day from the date it is postmarked if delivered by registered or certified mail.

B. Successors and Assigns. All of the terms, covenants and conditions of this Agreement shall be binding upon Landowner, Developer and City, and their respective successors and assigns. Whenever the terms "Landowner" or "Developer" are used in this Agreement, such term shall include any other successors and assigns as herein provided. This Agreement shall run with the land and be binding upon Landowner's successors and assigns in and to the Property and upon City's successors and assigns.

C. Relationship between City, Landowner, and Developer. It is hereby acknowledged that the relationship between City, Landowner, and Developer is not that of a partnership or joint venture and that City, Landowner, and Developer shall not be deemed or construed for any purpose to be the agent of the other. Except as expressly provided herein or in the Attachments hereto, City shall not have any rights, powers, duties or obligations with respect to the Project.

D. No Third-Party Beneficiaries. There shall be no third-party beneficiaries of this Agreement.

E. Counterparts. This Agreement may be signed in multiple counterparts which, when signed by all parties, shall constitute a binding agreement.

F. Integration. This Agreement contains the entire understanding between the parties relating to the transaction contemplated by this Agreement, notwithstanding any previous negotiations or agreements between the parties or their predecessors in interest with respect to all or any part of the subject matter hereof. All prior or contemporaneous agreements, understandings, representations and statements, oral or written, are merged in this Agreement and shall be of no further force or effect. Each party is entering this Agreement based solely upon the representations set forth herein and upon each party's own independent investigation of any and all facts such party deems material. This Agreement includes all Attachments and Exhibits attached hereto, which are incorporated herein.

G. Interpretation and Applicable Law. This Agreement has been prepared with input from both parties, and shall be interpreted as though prepared jointly by both parties. The laws of the State of California shall govern the interpretation and enforcement of this Agreement.

H. No Waiver. Any failures or delays by either party in asserting any of its rights and remedies as to any Default shall not operate as a waiver of any Default or of any such rights or remedies, or deprive either such party of its right to institute and maintain any actions or proceedings which it may deem necessary to protect, assert or enforce any such rights or remedies. Nor shall a waiver by either party of a breach of any of the covenants, conditions or promises under this Agreement to be performed by the other party be construed as a waiver of any succeeding breach of the same or other covenants, agreements, restrictions or conditions of this Agreement.

I. Modifications. For any alteration, change or modification of or to this Agreement to become effective, it shall be made in writing and in each instance signed on behalf of each party.

J. Legal Advice. Each party represents and warrants to the other the following: They have carefully read this Agreement, and in signing this Agreement, they do so with full knowledge of any right which they may have; they have received independent legal advice from their respective legal counsel as to the matters set forth in this Agreement, or have knowingly chosen not to consult legal counsel as to the matters set forth in this Agreement; and, they have freely signed this Agreement without any reliance upon any agreement, promise, statement or representation by or on behalf of the other party, or their respective agents, employees, or attorneys, except as specifically set forth in this Agreement, and without duress or coercion, whether economic or otherwise.

K. Cooperation. Each party agrees to cooperate with the other in this transaction and, in that regard, to sign any and all documents which may be reasonably necessary, helpful, or appropriate to carry out the purposes and intent of this Agreement including, but not limited to, releases or additional agreements.

L. Non-Liability of Officials and Employees of the City. No official, employee or agent of the City shall be personally liable to Landowner or Developer, or any successor in interest, in the event of any Default or breach by the City or for any amount which may become due to the Developer or its successors, or on any obligations under the terms of this Agreement.

M. Attorneys' Fees. In any action between the parties to interpret, enforce, reform, modify, rescind, or otherwise in connection with any of the terms or provisions of this Agreement, the prevailing party in the action shall be entitled, in addition to damages, injunctive relief, or any other relief to which it might be entitled, reasonable costs and expenses including, without limitation, litigation costs and reasonable attorneys' fees.

**IN WITNESS WHEREOF**, the City and the Developer have executed this Disposition and Development Agreement as of the date set forth above.

**LANDOWNER**

___________________________ Date: _______________________

___________________________

**DEVELOPER**

___________________________ Date: _______________________

___________________________, Managing Member

**CITY OF LEMOORE**

___________________________ Date: ________________________

________________, City Manager

**ATTEST:**

___________________________ Date: ________________________

__________________, City Clerk

# EXHIBIT A

# LEGAL DESCRIPTION AND DEPICTION OF PARCEL

.

Legal Description:

SEC 09/19/20 LOT 2 OF LEMOORE INDUSTRIAL PARK NO. 1, TRACT NO. 614, RECORDED 12/27/89 IN VOLUME 14 AT PAGE 42 OF LICENSED SURVEYOR PLATS. MAP OWNERSHIP DOCUMENT RECORDED 12/27/89 AS DOCUMENT NO. 8919108. (FORMERLY A PORTION OF 22-161-21)

City of
LEMOORE
CALIFORNIA

711 W. Cinnamon Drive ● Lemoore, California 93245 ● (559) 924-6744

# Staff Report

**Item No: 4-2**

**To:** **Lemoore City Council**

**From:** **Steve Brandt, City Planner**

**Date:** **April 25, 2022** **Meeting Date:** **May 3, 2022**

**Subject:** **Resolution 2022-17 – Certifying the Environmental Impact Report, Resolution 2022-18 – Initiating a Sphere of Influence Amendment and Annexation 2020-01 and approving General Plan Amendment 20202-03, First Readings – Ordinances 2022-05 and 2022-06 – Approving Zoning Map Amendment (Pre-Zoning) No. 2020-03, and adopting Planned Unit Development No. 2020-02, Resolution 2022-19 – Approving Tentative Subdivision Map Tract 932 and Major Site Plan Review No. 2020-02 in Accordance with the Findings and Conditions**

**Strategic Initiative:**

| | |
|---|---|
| ☐ Safe & Vibrant Community | ☒ Growing & Dynamic Economy |
| ☐ Fiscally Sound Government | ☐ Operational Excellence |
| ☒ Community & Neighborhood Livability | ☐ Not Applicable |

## Proposed Motion:

Following the duly noticed Public Hearing, City Council should make individual motions to approve each of the following items in the order listed (one at a time):

- Adopt Resolution No. 2022-17 certifying the Environmental Impact Report
- Adopt Resolution No. 2022-18 initiating a Sphere of Influence amendment and Annexation No. 2020-01, and approving General Plan Amendment 2020-03
- Introduce Ordinance No. 2022-05 approving Zoning Map Amendment (Pre-Zoning) No. 2020-03, and waive the first reading
- Introduce Ordinance No. 2022-06 approving Planned Unit Development No. 2020-02, and waive the first reading

- Adopt Resolution No. 2022-19 approving Tentative Subdivision Map Tract 932 and Major Site Plan Review No. 2020-02 in accordance with the findings and conditions in the resolution

**Recommendation:**

The Planning Commission held a public hearing on April 11, 2022. The Commission, on a 6-0 vote, recommended approval of all requests making up this project, including the conditions listed in City Council Resolution No. 2022-19.

**Project Proposal:**

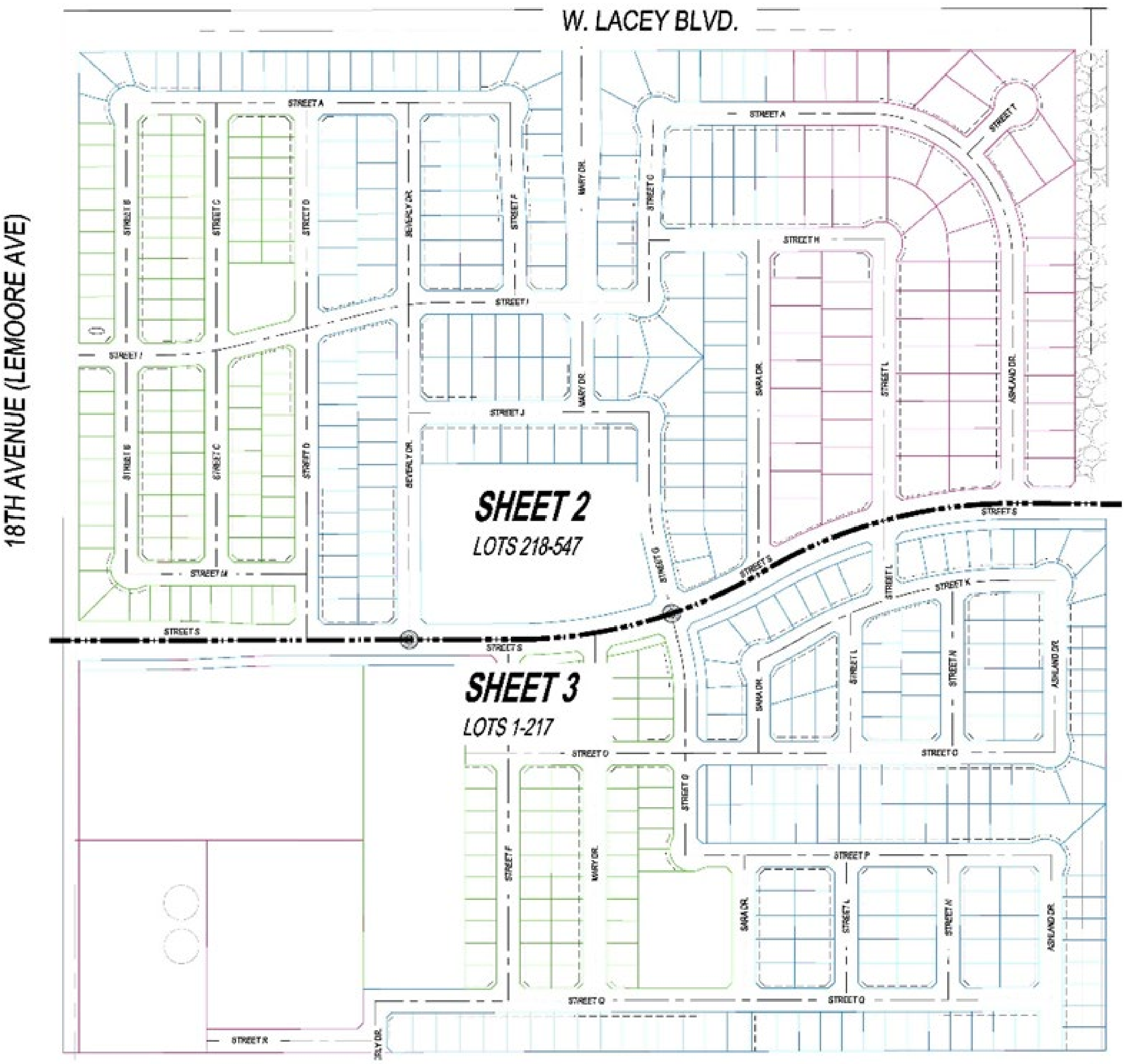
- Annexation Request No. 2020-01 is a request to annex 156 acres into the City of Lemoore.
- General Plan Amendment No. 2020-03 is a request to change the General Plan land use designations on the site from Agriculture/Rural Residential, Low Density Residential and Parks/Recreation to Low Density Residential, Medium Density Residential, High Density Residential, Parks/Recreation, and Greenway/Detention Basin.
- Prezoning No. 2020-03 is a request to prezone the site to Low Density Residential (RLD), Medium Density Residential (RMD), High Density Residential (RHD), and Parks/Recreation (PR).
- Tentative Subdivision Map Tract 932 is a request to divide 156 acres into 547 single-family lots. Access would be from 18th Avenue (Lemoore Avenue), Lacey Boulevard, E. Glendale Avenue, and W. Spruce Avenue.
- Planned Unit Development No. 2020-02 is a request to adopt the Lacey Ranch Master Plan. The project will also provide a trail and parks. The existing canal will be diverted to an underground pipe that will run under the trail.
- Major Site Plan Review No. 2020-02 is a request to approve the site plan of the project including a maximum of 825 housing units including single and multi-family housing, parks, trail, and a storm drainage basin.

This project, known as Lacey Ranch, is requesting approval of Tract No. 932 for 547 single-family lots and land for approximately 204 multi-family units. The project includes a ponding basin, three parks, and a landscaped trail. The project would be constructed in four planned phases. Lot sizes range from 4,231 square feet to 19,323 square feet, with an average lot size of 6,800 square feet. The proposed map is shown on page 5 of this report; a version of the full tentative map is attached. The elevations and floor plans for homes that will be built on the lots have not been submitted at this time. A site plan for the multi-family development will be submitted at a later date with an application for Major Site Plan Review.

| | |
|---|---|
| **Applicant** | Assemi Group |
| **Location** | Bounded by W. Lacey Blvd to the north and 18th Avenue (Lemoore Avenue) to the west |
| **Existing Land Use** | Vacant Land previously farmed with row crops |
| **APN(s)** | 021-030-057 |
| **Lot Size** | Min. 4,231 sq.ft. – Max. 19,323 sq.ft. |

| | |
|---|---|
| **Current Zoning** | N/A |
| **Current General Plan** | Agriculture/Rural Residential, Parks & Recreation, and Low Density Residential |
| **Proposed Zoning** | Low Density Residential (RLD), Medium Density Residential (RMD), High Density Residential (RHD), and Parks/Recreation (PR) |
| **Proposed General Plan** | Low Density Residential, Medium Density Residential, High Density Residential, Parks/Recreation, and Greenway/Detention Basin |

**Site Location – Aerial Photo**
**Tract No. 932**




**Proposed Tentative Subdivision Map**
**Tract No. 932 (full map in attachments)**

**Previous Relevant Actions:**
A comprehensive Sphere of Influence (SOI) amendment is underway to bring this property and others into the City of Lemoore's SOI. The Municipal Services Review has been completed and is under review by the Kings County LAFCO.

**Zoning and General Plan**
The site is designated Agriculture/Rural Residential, Parks & Recreation, and Low Density Residential by the General Plan. This project includes changing the General Plan land use designations to Low Density Residential, Medium Density Residential, High Density Residential, Parks/Recreation, and Greenway/Detention Basin. The current and proposed General Plan land use maps can be found on pages 7 and 8 of this report. Most of the site was not anticipated for urban development by the General Plan. This is the main reason for requiring an Environmental Impact Report (EIR) to review the proposed project.

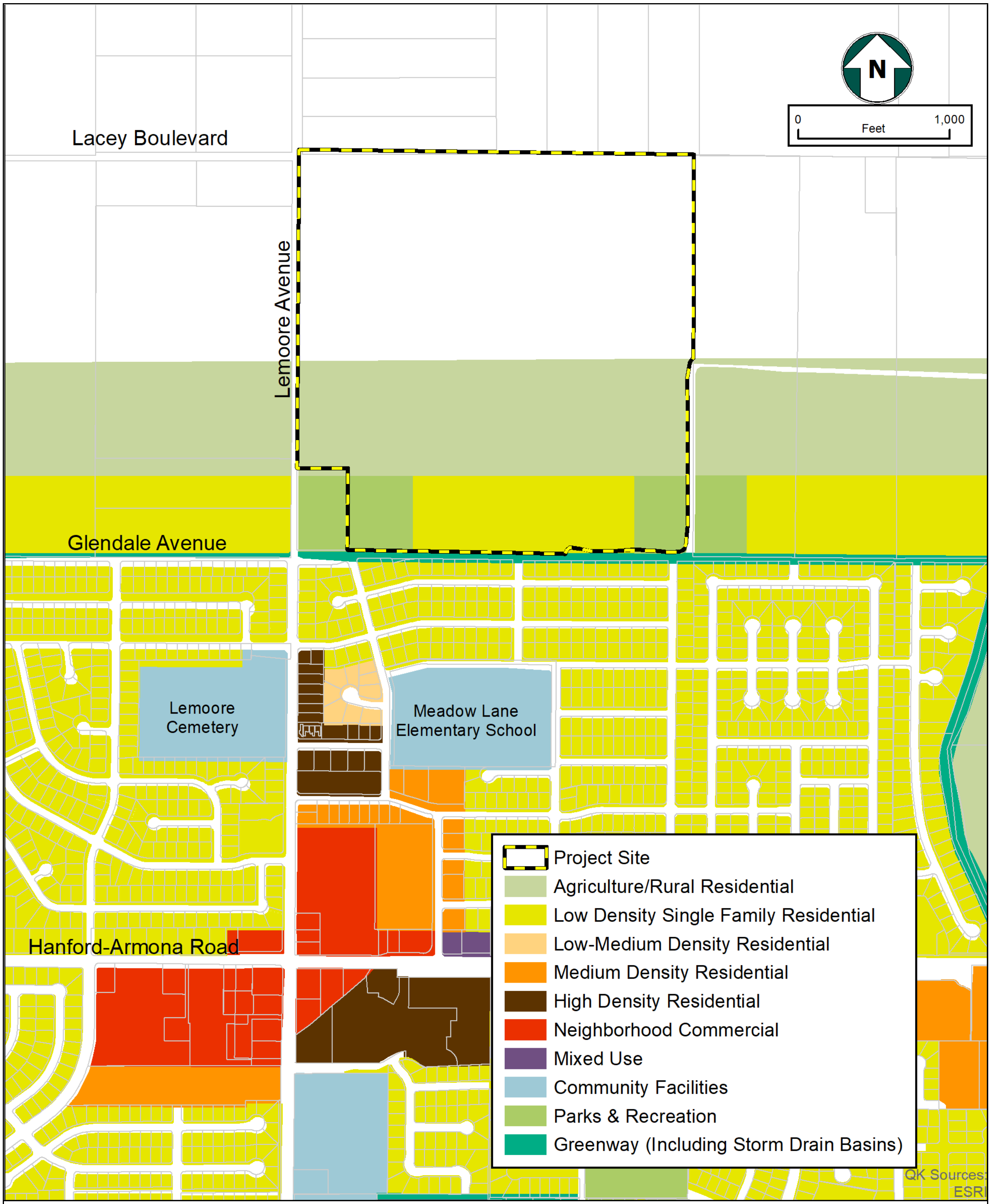
The General Plan Circulation Map is proposed to be amended to designate West Lacey Blvd. and 18th Avenue (Lemoore Avenue) as arterial streets. Arterials should have 84-100 feet of right of way. The applicant's Tentative Map complies with this City standard. The Circulation Map will also be amended to show a collector running east/west in the middle of the project with a name to be determined (currently labeled as "Street S"). The second arterial with a name to be determined will run north/south along the eastern edge of the project. The current and proposed General Plan circulation maps can be found on pages 9 and 10 of this report.

The map includes cross sections to show how each road will be constructed. A condition of approval recommends the new roads be constructed in the following phases:

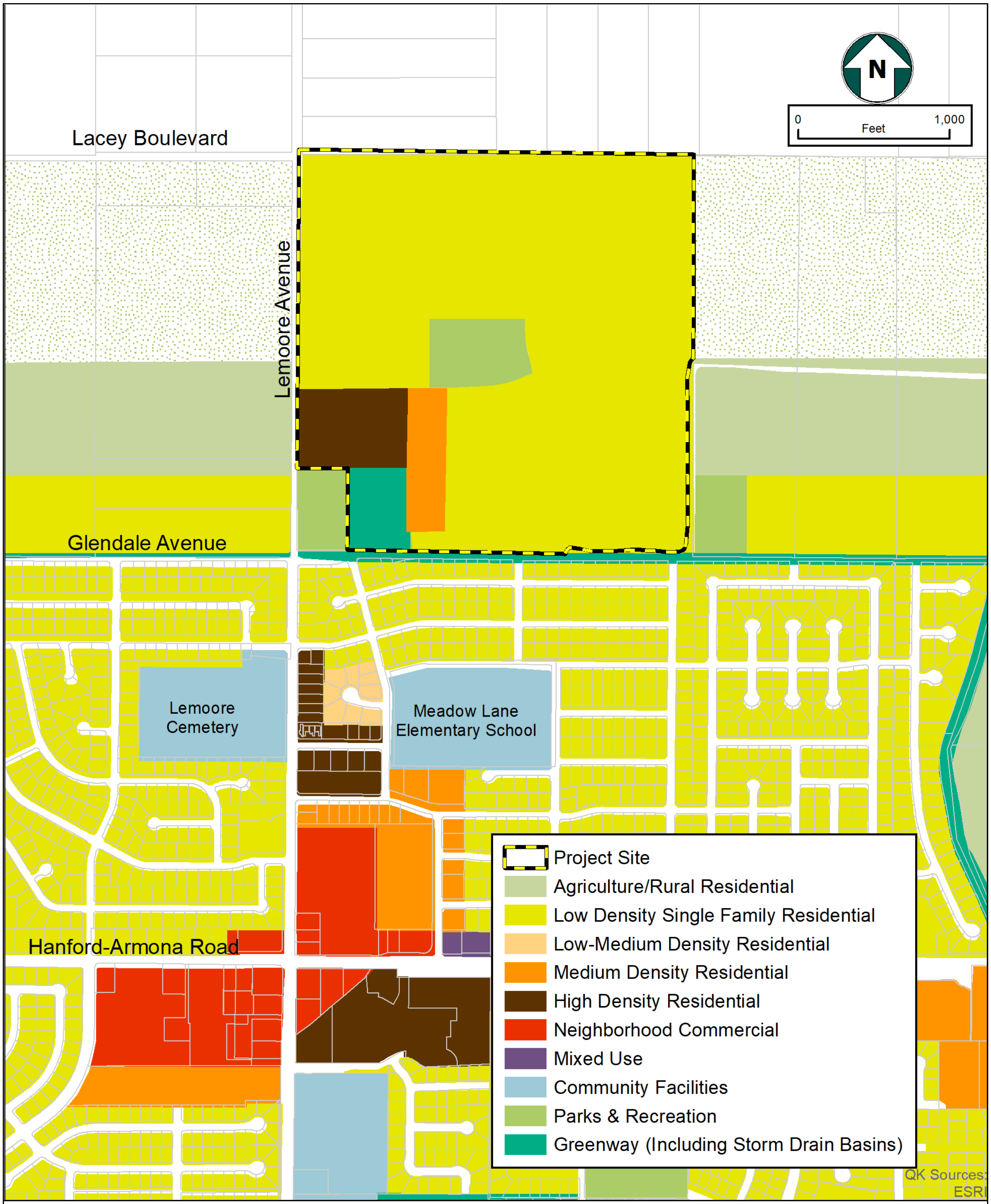
- In Phase 1, half of West Lacey Blvd. and 18th Avenue (Lemoore Avenue) will be constructed as arterial streets (adjacent to project site). The road, currently "Street S", will be built according to City standards for collector. The (unnamed) future collector running north/south at the western edge of the project will be provided only for emergency access for fire and emergency vehicles during this phase.
- In Phase 2, the (unnamed) future collector running north/south at the western edge of the project will be built to City standards for collector.

According to the General Plan, arterial streets are designed to move large volumes of traffic between highways and other arterials in Lemoore and to adjacent jurisdictions. Collectors provide two lanes and striped bike lanes in the street. Driveway access is minimized, consistent with the primary function of arterials to move through traffic. Landscaped parkway strips and sidewalks are accommodated within the right of way of minor arterials.

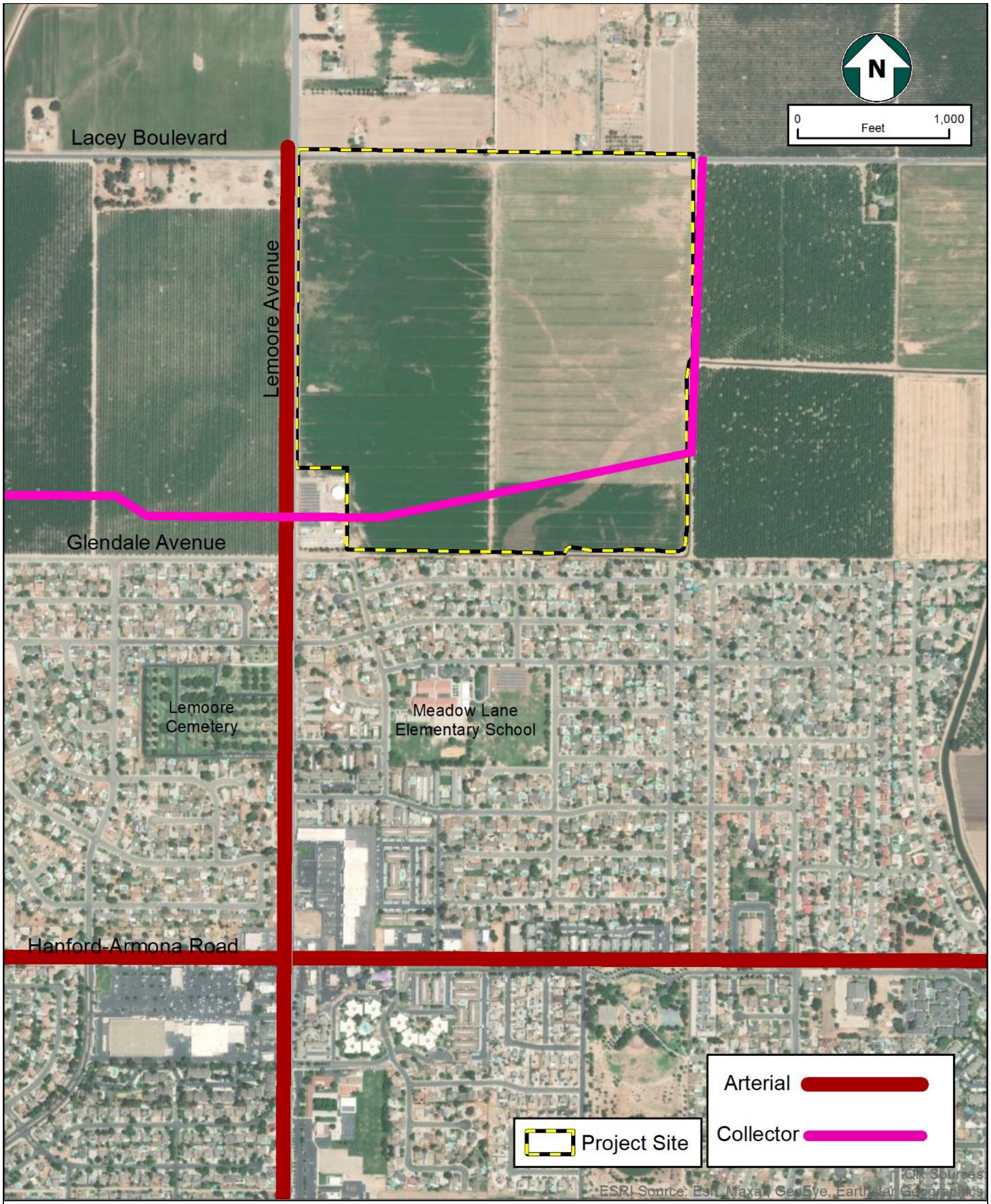
Collector streets provide a link between neighborhood streets and arterials. Collectors provide two through travel lanes, in addition to any bike lanes called for in the bikeway plan. On-street parking may be provided if sufficient width is available. Collectors also provide access to adjacent properties, so driveway access should be discouraged but need not be restricted (subject to accepted engineering practices). Bike lanes, landscaped parkway



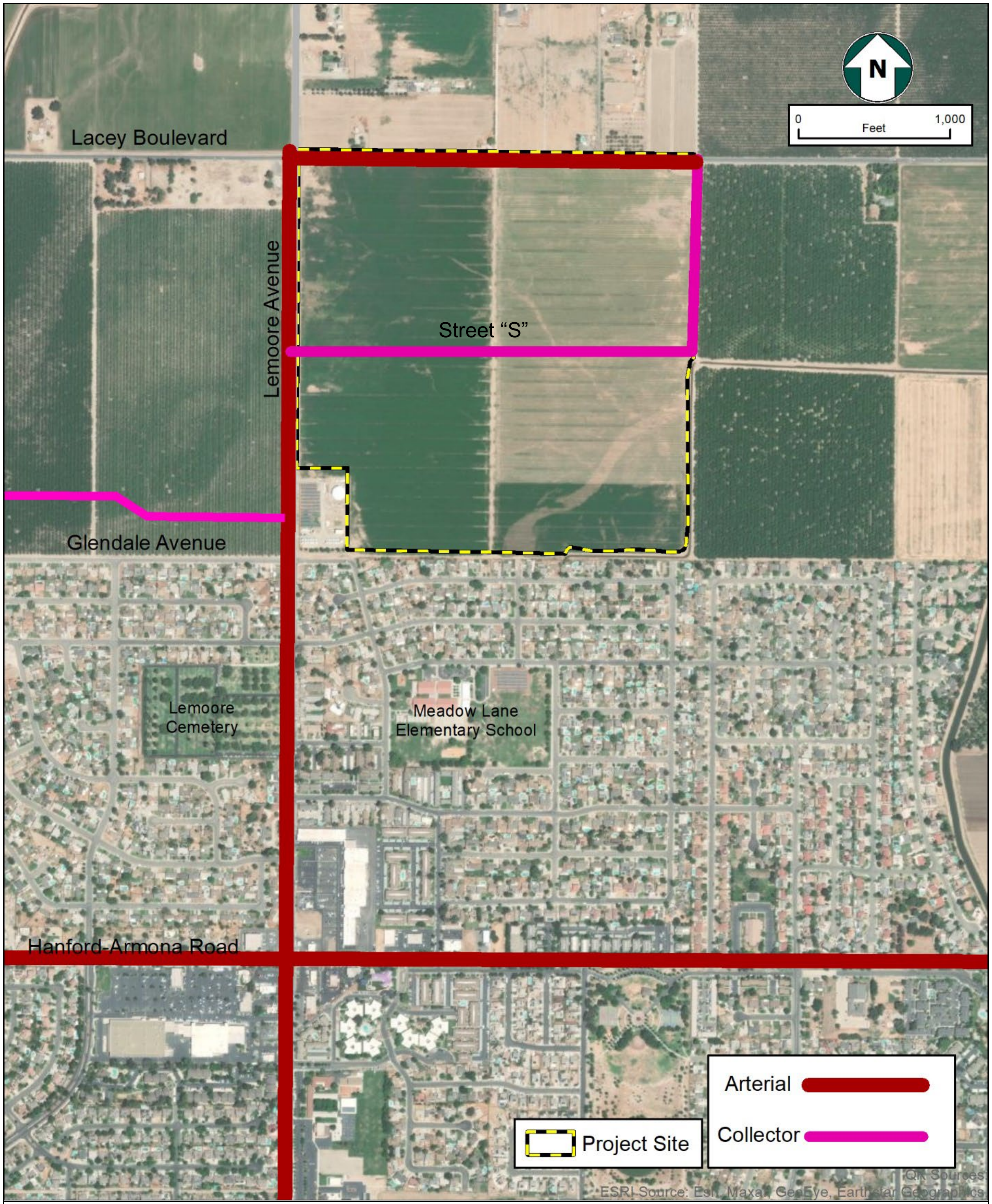

**Existing General Plan Land Use Designations**




**Proposed General Plan Land Use Designations**




**<u>Existing</u> General Plan Circulation**




**Proposed General Plan Circulation**

strips, sidewalks, and transit facilities may also be accommodated depending on the right-of-way available.

As for zoning designations, the site is outside of the City limits, so there is no current zoning on the site. The proposed prezoning would be consistent with the proposed General Plan land use designations.

**Tentative Map**
The Tentative Subdivision Map submitted by the applicant includes 547 total lots of various densities.

- 164 compact lots with an average lot size of 4,500 square feet
- 310 medium lots with an average lot size of 6,500 square feet
- 73 estate lots with an average lot size of 9,500 square feet
- 7.26 acres of multifamily (±145 units) at 20 units per acre
- 4.88 acres of multifamily (± 59 units) at 12 units per acre

The applicant's Tentative Map complies with the City standards. The map includes cross sections to show how each road will be constructed.

**Major Site Plan Review**
As stated before, the project will be constructed in four phases. The descriptions of the phases are:

- Phase 1 – 125 single family lots, 90 multifamily units and community park
- Phase 2 – 125 single family lots and 100 multifamily units
- Phase 3 – Dependent on market conditions
- Phase 4 – Dependent on market conditions

The proposed map is consistent with City standards for new subdivisions, except for the lot size and setbacks being proposed as part of the Planned Unit Development. The site plan for the multi-family development will be provided with a future application for site plan review.

**Vehicular Access**
The site has been designed with seven points of ingress and egress. One of these points connects at Lacey Boulevard along the northern edge of the Project; three access points connect at 18th Avenue (Lemoore Avenue) on the western edge; two access points are along the southern edge and one access point is along the eastern edge.

**Off-site Traffic Improvements**
According to the traffic study prepared for the CEQA document, off-site traffic mitigation measures include required improvements to the Liberty Drive/Hanford-Armona Road intersection. Signalization is required at the intersection with protected left-turn phasing in all directions while retaining the existing lane geometrics. A previous project, Tract 935 by Lennar Homes, also triggered similar improvements. Both projects will pay their fair share of impact fees toward the signalization of the intersection.

## Storm Drainage Basin

The site is planned to drain to a basin in the southwestern portion of the site. The basin is to accommodate the stormwater runoff from the subdivision. Specific requirements for storm drainage improvements are in the site plan review comments and an exhibit is provided as an attachment to this report.

## Parks

The parks will be built to City standards by the developer and dedicated to the City. Maintenance shall be funded through a public facilities maintenance district (PFMD). The proposal includes three parks and a trail. The parks are described as small park (0.63 acres), Lacey Ranch Park (4.09 acres), Trailhead Park (1.85 Acres), and the 1.64-acre trail. Staff is recommending a condition that Lacey Ranch Park be completed and opened for use by the public prior to the final inspection on the 5th home in Phase 1 of the project, not including model homes. The mini-park, trail, and trailhead park will be developed at the same time as when adjacent lots are developed. A conceptual overall park plan is shown on page 13 of this report. Individual exhibits for each park are included as an attachment to this report.

The applicant has proposed the incorporation of a dog park The dog park is currently shown in conjunction with the ponding basin. This location is tentative and subject to the approval of the Community Development Department and Public Works Department upon review of feasibility for ADA access and projected number of days it would not have stormwater in it.

City Ordinance requires 0.016 acres of park per single-family lot to be dedicated with a new subdivision. The 547 lots require 8.77 acres of park acreage. Based on the Tentative Map, it appears that 9.10 acres are being provided. Development of the Multi-family units will trigger separate park requirements that will be satisfied with the provision of onsite parks or an in-lieu fee with the amount based on an appraisal made by a certified general real estate appraiser in accordance with City Ordinance Section 8-7N-4.

## Canal and Trail

The Project will require an easement to Lemoore Canal & Irrigation District Co. as the above-ground canal along a portion of the western and southern boundary will be abandoned and relocated into an underground pipe through the Project site.

The plan proposes a trail running along “Street S” and “Street G” over the underground canal pipeline. For safety, signs will be installed at both ends of the trail indicating trail ending and/or beginning of roadway. The landscaped acreage of the trail will be included in the calculation of the total acreage of parks required. The canal pipeline easement will run within the trail area. The estimated acreage of the 35-foot-wide trail is approximately 1.64 acres. The final acreage will be determined based on the Final Map.

# LACEY RANCH OVERALL PLAN

**Williamson Act**
The site is currently within an Agricultural Preserve and is under Williamson Act contract. This contract is between the property owner and Kings County and limits the site to only agricultural uses. In accordance with State law, the City of Lemoore protested the contract when it was established. Because of this protest made by the City Council in 1982, the City has the option to nullify the contract upon annexation into the city limits. The annexation resolution makes the appropriate findings for the City to nullify the contract, and it will be voided upon completion of the annexation process.

**Planned Unit Development (PUD)**
The RLD (Low Density Residential) zone has a minimum lot size standard of 7,000 square feet as shown in the Lemoore Municipal Code (LMC), Table 9-5A-4A. The applicant has proposed modifications to the development standards, which can be obtained through the approval of a Planned Unit Development as shown in LMC, Title 9, Chapter 9, and would be conditioned on the future adoption of an ordinance by the City Council establishing an overlay zone for the Planned Unit Development. The proposed Planned Unit Development would modify those standards to allow smaller sized lots, the smallest lot being 4,231 square feet.

The RLD zone has standard building setback requirements as follows: 18 feet front for living space, 20 feet front for garage, 5 feet side (interior) for single-story homes, 10 feet side (interior) for two-story homes, 15 feet street side, 10 feet rear for single-story homes, and 15 feet rear for two-story homes, as shown in the Lemoore Municipal Code Title 9-5A-4A. The RLMD (Low-Medium Density Residential) zone has a minimum front setback of 20 feet, and the same side and rear setbacks as the RLD zone with the exception that the additional 5-foot setback is not required for two-story homes.

The applicant has proposed that the PUD modify the standards to change the required minimum setbacks for this subdivision. The minimum front setback would be 15 feet to the living space instead of 18 feet. The minimum setback for front facing garages will remain 20 feet, the side setback will be 5 feet for both single- and two-story homes, and the rear setback will be reduced to 10 feet for compact lots regardless of story number.

The trend of smaller lots with smaller setbacks started when new home prices increased dramatically in the mid 2000's. This trend appears to have been accepted by a large enough segment of the market that builders are continuing it. The State's emphasis on higher densities and more housing is consistent with this trend.

Staff reviewed the proposed setbacks. The smaller setbacks also allow homes to be built on smaller lots, which increases the total number of homes that can be built in the neighborhood and follows a homeowner market preference for smaller sized yards that require less maintenance. Therefore, Staff supports the reduced setbacks for this neighborhood as shown in the table on page 15 of this report.

Staff supports the minimum rear setbacks for two story homes on compact lots to be reduced from 15 feet to 10 feet in order to allow for more home types to be built on these lots. Staff also supports the reduction in the side yard setbacks for two-story homes to 5 feet. The maximum height of the homes would remain the same and the standards in the zoning ordinance.

**Comparison of Existing and Proposed Minimum Building Setbacks**

| | Required by Zoning Ordinance | Applicant-proposed Setbacks for this PUD | Staff Recommendation for this PUD |
|---|---|---|---|
| **Front to Living Space (minimum)** | 18 feet with 2-foot stagger from adjacent homes<br><br>12 feet to covered porch | 15 feet for compact and medium lots (12 feet to covered porch)<br><br>20 feet for estate lots (14 feet to covered porch) | 15 feet for compact and medium lots (12 feet to covered porch)<br><br>20 feet for estate lots (14 feet to covered porch) |
| **Front to Garage (minimum)** | 20 feet | 20 feet | 20 feet |
| **Interior Side (minimum)** | 5 feet for one-story | 5 feet (all) | 5 feet (all) |
| **Street Side (minimum)** | 15 feet | 10 feet | 10 feet |
| **Rear (minimum)** | 10 feet for one-story<br><br>15 feet for two-story | 10 feet for compact lots<br><br>15 feet for medium lots<br><br>20 feet for estate lots | 10 feet for compact lots<br><br>15 feet for medium lots<br><br>20 feet for estate lots |
| **Height (maximum)** | 35 feet | 35 feet | 35 feet |

**Residential Master Home Plans**

No master home plans have been submitted at this time. Review of residential master home plans is part of the Major Site Plan Review process for new residential subdivisions. The neighborhood will likely be sold to one or more home builders. These eventual home builder(s) will be required to submit home plans to the Planning Commission prior to development.

**Utilities and Development Impact Fees**

All wet and dry utilities will be installed by the developer, with some reimbursement from the City for oversizing of sewer trunk lines. The new sewer trunk line will extend eastward from 18 ¾ Avenue (Liberty Drive), north of Glendale Avenue to reach the site. This sewer trunkline is part of the master plan adopted by the City last year. Once inside the project site, the sewer trunkline will run in current “Street S” and stub at the east end of the project site so that it can be utilized in the event development occurs east of the project site.

Water lines will be constructed in all streets and the water system will connect to the overall City system. Storm drainage for the project will drain to the proposed storm drainage basin at the southwest corner of the site. The basin is sized to handle storm water from Phase 1 of the project. With the construction of future phases, a storm drain line from the basin to the Lemoore Canal will be constructed to convert the basin from a retention basin to a detention basin, thereby increasing its use capacity.

Development impact fees for water, sewer collection, and storm drainage are in the process of being revised to be consistent with the new infrastructure master plans. The project will pay the new fees since it will rely on new infrastructure that was not planned before the master plans were adopted.

**Environmental Assessment**

An Environmental Impact Report (EIR) was prepared for the project in accordance with the California Environmental Quality Act (CEQA), along with technical evaluations of agriculture conversion, air quality, biological resources, cultural resources, noise assessment, traffic impact, and water supply assessment. Mitigation measures were included for potential impacts to biology, cultural resources, geology & soils, hazards and hazardous materials, hydrology and water quality, noise, public services, traffic, tribal cultural resources, and utilities and service systems. The Mitigation Monitoring and Reporting Program can be found as an attachment to this report. Even with mitigation, impacts to prime agricultural land and the cumulative effects of loss of prime farmland, biological habitat modification, hydrology, vehicle miles traveled, and utilities were found to be significant and unavoidable. Therefore, if the City Council chooses to approve the project, they will be required to adopt a Statement of Overriding Considerations that describes the reasons for approving the project even with the significant environmental effects. Recommended reasons are included in the findings.

**Recommended Findings and Conditions**

The Planning Commission recommended findings for approval of the project. Those findings can be found in the three attached resolutions and the two attached ordinances.

## Financial Consideration(s):

The financial considerations are similar to other new residential subdivisions, and a public facilities maintenance district (PFMD) will be created to fund maintenance of public landscaping and infrastructure. Improvements to the Liberty Drive/Hanford-Armona Road intersection will be funded by the traffic impact fee fund. This developer, as well as previous and future developers pay impact fees into that fund to cover their fair share of the traffic impacts that they generate.

## Alternatives or Pros/Cons:

Alternatively, the Council could modify the conditions of approval based on evidence presented at the public hearing; or the Council could deny the project.

| **Attachments:** | **Review:** | **Date:** |
|---|---|---|
| ☒ Resolution: 2022-17, 2022-18, & 2022-19 | ☒ Asst. City Manager | 04/25/2022 |
| ☒ Ordinance: 2022-05 & 2022-06 | ☒ City Attorney | 04/28/2022 |
| ☒ Map Tract Map 932 | ☒ City Clerk | 04/28/2022 |
| | ☒ City Manager | 04/27/2022 |
| ☐ Contract | ☒ Finance | 04/27/2022 |
| ☒ Other | | |

List:

- Parks and Trail Exhibits
- Basin with Dog Park and ADA Access
- Trail Cross-sections
- Environmental Impact Report
  - Draft EIR
  - Draft EIR Appendices A through I
  - Final EIR (comments received on Draft EIR and staff responses)
- Planning Commission Resolution No. 2022-03 dated April 11, 2022

**RESOLUTION NO. 2022-17**

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LEMOORE CERTIFYING THE ENVIRONMENTAL IMPACT REPORT PREPARED FOR THE LACEY RANCH AREA MASTER PLAN PROJECT (SCH#2020080314)**

**WHEREAS,** the City of Lemoore has caused to have prepared an Environmental Impact Report (EIR) consistent with the California Environmental Quality Act (CEQA) to inform the public, regulatory agencies, and the City of Lemoore decision makers of the potential environmental impacts that the proposed Lacey Ranch Master Plan Project would have on environmental factors as specified in the CEQA Guidelines; and,

**WHEREAS,** the City of Lemoore Planning Commission recommended certification of the EIR after holding a duly noticed public hearing on April 11, 2022, and,

**WHEREAS**, the City of Lemoore City Council held a duly noticed public hearing at its May 3, 2022, meeting to consider certification of the EIR.

**NOW, THEREFORE, BE IT RESOLVED,** that the City Council of the City of Lemoore hereby takes the following actions:

1. The City Council finds that the EIR for the Lacey Ranch Master Plan Project, which consists of the Draft EIR and the Final EIR (Response to Comments) (collectively the EIR) has been completed in accordance with the requirements of the CEQA and the State CEQA Guidelines.

2. The City Council certifies that the EIR was prepared, published, circulated, and reviewed in accordance with the requirements of CEQA and the CEQA Guidelines, and constitutes an adequate, accurate, objective, and complete Final Environmental Impact Report in full compliance with the requirements of CEQA and the State CEQA Guidelines.

3. The City Council certifies that the EIR has been presented to the City Council, and the City Council has reviewed the EIR and has considered the information contained in the EIR prior to acting on the proposed Project, and that the EIR reflects the City Council's independent judgment and analysis.

4. Pursuant to CEQA Guidelines Sections 15091 and 15093, and in support of its approval of the Project, the City Council adopts the attached Findings of Fact and Statement of Overriding Considerations in support of approval of the Project as set forth in the attached Exhibit A of this Resolution.

5. Pursuant to CEQA Section 21081.6 and CEQA Guidelines Section 15091, and in support of its approval of the Project, the City Council adopts the Mitigation Monitoring and Reporting Program (MMRP) to require all reasonably feasible mitigation measures be implemented by means of Project conditions, agreements, or other measures, as set forth in Exhibit B of this Resolution.

6. The City Council directs that, upon approval of the Project, the City's Community Development Department shall file a Notice of Determination with the County Clerk of Kings County and with the State Office of Planning and Research, pursuant to the provisions of CEQA section 21152.

7. Pursuant to Guidelines section 15091(e), the documents and other materials that constitute the record of proceedings upon which the City Council has based its decision are located in and may be obtained from the City of Lemoore City Clerk at 711 W. Cinnamon Drive, Lemoore, California.

**PASSED AND ADOPTED** at a Meeting of the City Council of the City of Lemoore held on the 3rd day of May 2022 by the following vote:

AYES:

NOES:

ABSTAINING:

ABSENT:

ATTEST:

__________________________
Marisa Avalos
City Clerk

APPROVED:

__________________________
Stuart Lyons
Mayor

# Exhibit A

## City of Lemoore
## Lacey Ranch Area Master Plan

Facts, Findings, and Statement of Overriding Considerations
Regarding the Environmental Effects from the
Environmental Impact Report

State Clearinghouse # 2020080314

April 2022

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# FACTS, FINDINGS AND STATEMENT OF OVERRIDING CONSIDERATIONS

## 1.0 Introduction

The City Council of the City of Lemoore (City), in approving the proposed Lacey Ranch Area Master Plan Project (the Project or proposed Project), makes the Findings described below and adopts the Statement of Overriding Considerations presented at the end of the Findings. The Draft Environmental Impact Report (State Clearinghouse #2020080314) was prepared by the City acting as lead agency pursuant to the California Environmental Quality Act (CEQA). Hereafter, unless specifically identified, the Initial Study / Notice of Preparation (IS/NOP), Notice of Availability & Completion (NOA/NOC), Draft Environmental Impact Report (DEIR or Draft EIR), Appendices, Technical Studies, Final EIR containing Responses to Comments and textual revisions to the Draft EIR (in the Final EIR), and the Mitigation Monitoring and Reporting Program (MMRP) will be referred to collectively herein as the "EIR." These Findings are based on the entire record before the City Council, including the EIR. The City Council adopts the facts and analyses in the EIR, which are summarized below for convenience. The omission of some detail or aspect of the EIR does not mean that it has been rejected by the City.

## 2.0 Project Summary

### 2.1 Project Description

Within the Lacey Ranch Area Master Plan, the Project applicant is proposing to subdivide and develop approximately 156-acres of land into a planned residential community with a mix of single-family and multi-family housing units. The exact number of each housing type may vary slightly, depending on final density, however, there will be a maximum of 825 housing units in total. Approximately 75% of the site will be developed with single family housing units on a variety of lot sizes, with the remainder to be developed with multi-family housing and parks/trails. The Project applicant proposes to annex the site into the City Limits of Lemoore and will require a General Plan Amendment and Zone Change to change the land use designations from agriculture to residential. The Project will also require a modification to the City's Sphere of Influence.

## 2.2 Project Location

The proposed Project is located on approximately 156-acres immediately north of the City of Lemoore in Kings County and is bounded by W. Lacey Blvd to the north and 18th Avenue to the west. An existing residential development abuts the Project's southern boundary. The Project is on assessor parcel number 021-030-057-000.

## 2.3 Project Objectives

In accordance with CEQA Guidelines Section 15124(b), the following are the City of Lemoore's Project objectives:

1. To provide a variety of housing opportunities with a range of densities, styles, sizes and values that will be designed to satisfy existing and future demand for quality housing in the area.
2. To provide a sense of community and walkability within the development through the use of street patterns, parks/trails, landscaping and other project amenities.
3. To provide a residential development that is compatible with surrounding land uses and is near major services.
4. To provide a residential development that assists the City in meeting its General Plan and Housing Element requirements and objectives.

## 2.4 Actions Covered by the EIR

The City of Lemoore is the Lead Agency for the proposed Project. The Lacey Ranch Area Master Plan Project will be presented to the Planning Commission and City Council for comment, review and consideration for adoption. The City Council has the sole discretionary authority to approve and adopt the EIR for the Lacey Ranch Area Master Plan Project. In order to approve the proposed Project, the City Council would consider the following actions:

- Annexation of approximately 156 acres from Kings County into the City of Lemoore
- Formal request for Sphere of Influence Amendment
- Approval of a General Plan Amendment
- Approval of a Prezoning
- Adoption of the Lacey Ranch Master Plan through a Planned Unit Development
- Approval of Tentative Tract Map(s)
- Approval of Major Site Plan Review
- Certification of the Project EIR

- Certification of the Final EIR
- Adoption of the Mitigation Monitoring and Reporting Program
- Adoption of 15091 and 15093 Findings and Statement of Overriding Considerations
- Issuance of Grading / Building Permits
- Approval of the Project Water Supply Assessment

As mandated by CEQA Guidelines Section 15124(d), this section contains a list of agencies that are expected to use the EIR in their decision-making, and a list of the approvals for which the EIR may be used. These lists include information that is known to the Lead Agency. A range of responsible and trustee agencies may utilize the EIR in the review of subsequent implementation activities over which that may have responsibility. A responsible agency is a public agency which has discretionary review approval power over a project (CEQA Guidelines Section 15381). A trustee agency is a state agency that has jurisdiction by law over natural resources affected by a project which are held in trust for the people of the state (CEQA Guidelines Section 15386). The Project will require various permits and/or entitlements from regulatory agencies. These may include, but not be limited to the following:

- LAFCO of Kings County – approval of Annexation and Sphere of Influence Amendment
- San Joaquin Valley Air Pollution Control District – approval of Rule 9510 AIA Application
- Regional Water Quality Control Board- Storm Water Pollution Prevention Plan

# 3.0 Environmental Review Process Summary; Content of EIR and Record

## 3.1 Initial Study / Notice of Preparation

In accordance with CEQA, the City of Lemoore circulated an Initial Study (IS) and Notice of Preparation (NOP) (referred to collectively as "IS/NOP") of a Draft EIR for the proposed Project from August 20, 2020 through September 21, 2020 to trustee and responsible agencies, the State Clearinghouse (SCH #2020080314), and the public. The IS/NOP analyzed the following CEQA Appendix G topics, and it was determined that no impacts would occur that would require analysis in the Draft EIR:

1. Aesthetics
2. Mineral Resources
3. Recreation
4. Wildfire

Individual impact questions that were also determined to have no impact and were scoped out of the EIR include the following:

1. Geology and Soils (Impact 3.6-e): The Project would not have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water.
2. Population and Housing (Impact 3.14-b): The Project will not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

Three agency comments on the IS/NOP related to the EIR analysis were presented or submitted during the public review period. The letters are summarized as follows:

1. **California Department of Conservation – Geologic Energy Management Division:** Provided regulations pertaining to handling of any known oil or gas wells located within the Project boundaries.
2. **California Department of Conservation – Division of Land Resource Protection:** Provided regulations pertaining to conversion of farmland to urban uses.
3. **Pacific Gas and Electric Company:** Provided information and regulations pertaining to gas and electric facilities that would serve the Project.

These comment letters were identified and incorporated into the Draft EIR. In addition, pursuant to Section 15206 of the State CEQA Guidelines, the City was required to conduct at least one scoping

meeting for all projects of statewide, regional, or area-wide significance. The scoping meeting was for jurisdictional agencies and interested persons or groups to provide comments regarding (but not limited to) the range of actions, alternatives, mitigation measures, and environmental effects to be analyzed to be analyzed in the Draft EIR. The City of Lemoore hosted a scoping meeting on September 14, 2020, which was during the 30-day public review period of the IS/NOP.

## 3.2 Draft and Final EIR

*Draft EIR*

The Draft EIR was properly noticed and circulated for public review and comment for 45 days, from January 25, 2022 through March 11, 2022. The Notice of Availability was published in the *Hanford Sentinel* newspaper. The Draft EIR and Appendices were sent to the State Clearinghouse for distribution and notices were mailed to adjacent landowners, local agencies and other interested individuals. The City received four comment letters and two emailed comments on the Draft EIR. These letters and emails are reproduced in their entirety in Chapter Two of the Final EIR and responses are shown after each letter.

*Final EIR*

The Final EIR presents the environmental information and analyses that have been prepared for the proposed Project, including comments received addressing the adequacy of the Draft EIR, and responses to those comments. The Final EIR, which includes the responses to comments, the Draft EIR, and the Mitigation, Monitoring, and Reporting Program, will be used by the Lemoore Planning Commission and the City Council in the decision-making process for the proposed Project.

The responses in the Final EIR clarify, correct, and/or amplify text in the Draft EIR. Also included in the Final EIR are minor text changes made at the initiative of the City (the Lead Agency) and in response to comments that were received on the Draft EIR. The Final EIR was prepared in accordance with the CEQA (California Public Resources Code Sections 21000-21177).

The revisions outlined in the Final EIR fall within the scope of the original Project analysis included in the Draft EIR and do not result in an increase to any identified impacts or produce any new impacts. No new significant environmental impact would result from the changes or from a new mitigation measures proposed to be implemented. Therefore, no significant revisions have been made which would require recirculation of the Draft EIR pursuant to CEQA Guidelines Section 15088.5 (Recirculation of an EIR Prior to Certification).

## 3.3 Content of the EIR

The Lacey Ranch Area Master Plan "EIR" is comprised of the following materials:

- The Final EIR including any attached appendices;
- The Draft EIR including attached appendices;
- The Initial Study / Notice of Preparation and comments received in response to the Initial Study / Notice of Preparation;
- The Mitigation Monitoring and Reporting Plan ("MMRP");
- Additions and corrections to the portions of the Draft EIR that have been made pursuant to public comments and Draft EIR review including all appendices attached thereto;
- Comments received on the Draft EIR with responses to each of the comments made;
- The Notice of Completion and Availability of the Draft EIR for public review; and
- Any other information added by the Lead Agency.

(All hereafter collectively referred to as the "EIR").

Documents that shall accompany and be part of the EIR are:

1. Findings of Fact; and
2. Statement of Overriding Considerations.

The EIR, is hereby incorporated by reference into these findings without limitation. This incorporation is intended to address the scope and nature of mitigation measures, the basis for determining the significance of impacts, the comparative analysis of alternatives, and the reasons for approving the Project despite the potential for associated significant and unavoidable impacts.

## 3.4 Record of Proceedings

In accordance with CEQA Section 21167.6(e), the record of proceedings for the City's decision on the Project includes, without limitation, the following documents:

- The IS/NOP and all other public notices issued by the City in conjunction with the scoping period for the Project;
- All comments submitted by agencies or members of the public during the scoping comment period on the IS/NOP;

- The Draft EIR for the Project;
- All comments submitted by agencies or members of the public during the comment period on the Draft EIR;
- Responses to agency comments on the Draft EIR (provided in the Final EIR);
- The Final EIR for the Project;
- Documents cited or referenced in the Draft and Final EIRs;
- The Mitigation Monitoring and Reporting Program (MMRP) for the Project;
- The Notice of Completion and Availability of the Draft EIR for public review;
- All findings and resolutions adopted by the City in connection with the Project and all documents cited or referred to therein, including these findings;
- All reports, studies, memoranda, diagrams, staff reports, or other planning documents relating to the Project prepared by the City, consultants to the City, or responsible or trustee agencies with respect to the City's compliance with the requirements of CEQA and with respect to the City's action on the Project;
- All documents submitted to the City by other public agencies or members of the public in connection with the Project up through final consideration of Project approval;
- All minutes and/or verbatim transcripts, as available, of all public meetings held by the City in connection with the Project;
- Any documentary or other evidence submitted to the City at such public meetings, and any other information added by the City as Lead Agency;
- Any other materials required to be in the record of proceedings by Public Resources Code Section 21167.6(e).

The official custodian of the documents comprising the record of proceedings is the City of Lemoore Community Development Department, located at 711 W. Cinnamon Drive, Lemoore, CA 93245. All files have been available to the Department and the public for review in considering these findings and whether to approve the Project.

## 3.4 Public Hearings

A duly noticed Scoping Meeting was held on September 14, 2020 and a Public Hearing was held at the Planning Commission on April 11, 2022.

# 4.0 Preliminary Findings

## 4.1 Lead Agency; Independent Judgment

The City of Lemoore is the "Lead Agency" for the proposed Project and evaluated the EIR. The City retained the independent consulting firm of Crawford & Bowen Planning, Inc. to prepare the EIR for the Project. Crawford & Bowen prepared the EIR under the supervision, direction, and review of the City. The City has received and reviewed the EIR prior to certifying the EIR and prior to making any decision to approve or disapprove the Project. The City finds it has exercised independent judgment in accordance with Public Resources Code Section 21082.1(c)(3) in directing the consultant in the preparation of the EIR, as well as reviewing, analyzing, and revising material prepared by the consultant. The City finds that the EIR was prepared in compliance with CEQA and the CEQA Guidelines. The City finds that it has independently reviewed and analyzed the EIR for the proposed Project, that the Draft EIR was circulated for public review reflected its independent judgment, the Final EIR reflects the independent judgment of the City, and that the EIR reflects the independent judgment of the City.

## 4.2 Public Review Provided

The City Council finds that the EIR provides objective information to assist the decision-makers and the public at large in their consideration of the environmental consequences of the proposed Project. The public review period provided all interested jurisdictions, agencies, private organizations, and individuals the opportunity to submit comments regarding the Draft EIR. The Final EIR was prepared after the review period and responds to comments made during the public review period.

## 4.3 Purpose of Errata and Corrections; Clerical Errors

Textual clarifications are sometimes needed to describe refinements suggested as part of the public participation process. The changes and modifications made to an EIR after the Draft EIR was circulated for public review and comment can be made under Public Resources Code section 21092.1 or CEQA Guidelines section 15088.5 in the Final EIR.

## 4.4 Clerical Errors

The City recognizes that the EIR may contain clerical and/or typographical errors. The City reviewed the entirety of the EIR and bases its determination on the substance of the information it contains.

## 4.5 Evaluation and Response to Comments

The City evaluated comments on environmental issues received from persons who reviewed the Draft EIR. In accordance with CEQA, the City prepared written responses describing the disposition of significant environmental issues raised. The Final EIR provides an adequate, good-faith and reasoned response to the comments. The City reviewed the comments received and responses thereto and has determined that neither the comments received nor the responses to such comments add significant new information regarding environmental impacts to the Draft EIR. The City has based its actions on full appraisal of all viewpoints, including all comments received up to the date of adoption of these Findings, concerning the environmental impacts identified and analyzed in the EIR.

## 4.6 Recirculation of Final EIR Not Required

The Final EIR documents comments and responses to the Draft EIR. The Final EIR incorporates information obtained and produced after the Draft EIR was completed, and the Final EIR contains clarifications to the Draft EIR. The City has reviewed and considered the Final EIR and all of this information. The information added to the Final EIR does not involve a new significant environmental impact, a substantial increase in the severity of an environmental impact, or a feasible mitigation measure or alternative considerably different from others previously analyzed that the Project sponsor declines to adopt and that would clearly lessen the significant environmental impacts of the Project. No information indicates that the Draft EIR was inadequate or conclusory or that the public was deprived of a meaningful opportunity to review and comment on the Draft EIR or the Project. Specifically, the City finds that the information was not “significant new information” as contemplated by CEQA Guidelines section 15088.5, and does not show:

(1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented;

(2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.

(3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the significant environmental impacts of the project, but the project's proponents decline to adopt it.

(4) The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.

Thus, recirculation of the Draft EIR is not required.

## 4.7 MMRP; Mitigation Measures

CEQA requires the Lead Agency approving a project to adopt a mitigation monitoring and reporting program (MMRP) or the changes to the project which it has adopted or made a condition of project approval to ensure compliance with the mitigation measures during project implementation. The mitigation measures included in the EIR as certified by the City as adopted by the City serves that function. The MMRP includes all of the mitigation measures and Project design features adopted by the City in connection with the approval of the proposed Project and has been designed to ensure compliance with such measures during implementation of the proposed Project. In accordance with CEQA, the MMRP provides the means to ensure that the mitigation measures are fully enforceable.

Unless specifically stated to the contrary in these findings, it is this City Council's intent to adopt all mitigation measures recommended by the EIR that are applicable to the Project. If a measure has, through error, been omitted from the Approvals or from these Findings, and that measure is not specifically reflected in these Findings, that measure shall be deemed to be adopted pursuant to this paragraph. In addition, unless specifically stated to the contrary in these Findings, all Approvals repeating or rewording mitigation measures recommended in the EIR are intended to be substantially similar to the mitigation measures recommended in the EIR and are found to be equally effective in avoiding or lessening the identified environmental impact. In each instance, the Approvals contain the final wording for the mitigation measures.

In accordance with the requirements of Public Resources Section 21081.6, the City hereby adopts the MMRP. The mitigation measures identified for the proposed Project were included in the Draft EIR and Final EIR to mitigate or avoid significant effects on the environment and has been designed to ensure compliance during Project implementation. As revised, the final mitigation measures for the proposed Project are described in the MMRP. Each of the mitigation measures identified in the MMRP is incorporated into the proposed Project and made a condition of approval for permits, required by agreement, or other measures to ensure the MMRP is fully enforceable. The City finds that the impacts of the proposed Project have been mitigated to the extent feasible by the mitigation measures identified in the MMRP.

## 4.8 Substantial Evidence

The City finds and declares that substantial evidence for each and every finding made herein is contained in the EIR, which is incorporated herein by this reference, or is in the record of proceedings in the matter.

## 4.9 Entirety of Action

The City is certifying an EIR for, and is approving and adopting findings for, the entirety of the actions described in these Findings and in the EIR as comprising the proposed Project.

## 4.10 Effect of Public Comments

The City finds that none of the public comments to the Draft EIR or subsequent public comments or other evidence in the record, including any changes in the proposed Project in response to input from the community, include or constitute substantial evidence that would require recirculation of the EIR prior to certification of the EIR and that there is no substantial evidence elsewhere in the record of proceedings that would require substantial revision of the EIR prior to its certification, and that the EIR need not be recirculated prior to its certification.

## 4.11 Independent Review of Record

The City Council, after receiving a recommendation from the Planning Commission, certifies that the EIR has been completed in compliance with CEQA. The City Council has independently reviewed the record and the EIR prior to certifying the EIR and approving the Project. By adopting these Findings, the City Council on behalf of the City confirms, ratifies, and adopts the findings and conclusions of the EIR as supplemented and modified by these Findings. The EIR and these Findings represent the independent judgment and analysis of the City and the City Council.

## 4.12 Adequacy of EIR to Support Approval of the Proposed Project

The City certifies that the EIR is adequate to support all actions in connection with the approval of the proposed Project. The City Council certifies that the EIR is adequate to support approval of the proposed Project described in the EIR, each component and phase of the proposed Project described in the EIR, any variant of the Project described in the EIR, any minor modifications to the proposed Project or variants described in the EIR, as well as all components of the proposed Project.

## 4.13 Project EIR Findings

In accordance with Public Resources Code section 21081 and CEQA Guidelines sections 15091 and 15092, the City makes the specific findings required by CEQA with respect to each area of potential environmental impact as further set forth in this Section of these Findings. These Findings do not repeat the full discussions of environmental impacts, mitigation measures, and related explanations

contained in the EIR. The City ratifies, adopts, and incorporates, as though fully set forth, the analysis, explanation, findings, responses to comments and conclusions of the EIR. The City adopts the reasoning of the EIR, staff reports, and presentations provided by City staff and the independent consulting firm of Crawford & Bowen Planning, Inc., as may be modified by these Findings.

# 5.0 ENVIRONMENTAL IMPACTS AND FINDINGS

## 5.1 Introduction

City staff reports; the EIR; written and oral testimony at public meetings or hearings; these facts, findings, and statement of overriding considerations; and other information in the administrative record (as further defined above) serve as the basis for the City's environmental determination. Public Resources Code Section 21081 requires that the City Council make one of the following findings for each significant impact:

1. Changes or alterations have been required in, or incorporated into, the project which mitigate or avoid the significant environmental effects identified in the EIR;
2. Those changes or alterations are within the purview and jurisdiction of another public agency, and such changes have been, or can and should be adopted by that other agency; or
3. Specific economic, legal, social, technological, or other considerations make infeasible the mitigation measures or alternatives identified in the EIR.

The same requirements for adopting these findings are also contained in CEQA Guidelines Section 15091(a). Public Resources Code Section 21061.1 defines "feasible" to mean "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, and environmental, social and technological factors." By this document, the City Council makes the findings required by Public Resources Code Section 21081 with regard to the proposed Project.

Additionally, Public Resources Code Section 21002 provides that "public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects." It also states, "in the event specific economic, social, or other conditions make infeasible such project alternatives or such mitigation measures, individual projects may be approved in spite of one or more significant effects thereof."

The three available findings under Section 21081 and Guideline Section 15091(a) allow an approving agency to specify, as to particular significant environmental impacts, whether the agency is (a) adopting mitigation measures recommended in an EIR; (b) identifying measures that lay outside its control but should be, or have been, adopted by another agency; or (c) identifying measures that are infeasible. For projects with EIRs that include numerous mitigation measures that are either infeasible or outside the approving agency's control, findings may be very lengthy, as they must explain, for example, why some measures are rejected as being infeasible. In contrast, where the approving agency chooses to adopt each and every mitigation measure recommended in an EIR, there would seem to be little point in repeated invoking, over many dozens of pages, the finding that "[c]hanges or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the final EIR." Guideline Section 15091(a).

Where significant impacts are not avoided or significantly lessened, a public agency, after adopting proper findings, may nevertheless approve the project if the agency first adopts a statement of overriding considerations setting forth the specific reasons why the agency found that the project's benefits rendered acceptable its unavoidable adverse environmental effects. CEQA Guidelines §§15093, 15043(b).

The findings below are the City Council's best efforts to set forth the evidentiary and policy bases for its decision to approve the proposed Project in a manner consistent with the requirements of CEQA. These findings are not merely informational but, rather, constitute a binding set of obligations that come into effect with the City Council's approval of the proposed Project. The City Council adopts these findings for the entirety of the actions described in these findings and in the Final EIR.

Having received, reviewed, and considered the Final EIR and other information in the record of proceedings, based on the substantial evidence the City Council hereby adopts the following findings in compliance with CEQA and the CEQA Guidelines.

1. Findings regarding the environmental review process and the contents of the Final EIR.
2. Findings regarding the environmental impacts of the proposed Project and the mitigation measures (General Plan policies, etc.) for those impacts identified in the Final EIR and incorporated into the Project.
3. Findings regarding alternatives and the reasons that such alternatives are rejected.
4. Statement of Overriding Considerations determining that the benefits of implementing the proposed Project outweigh the significant and unavoidable environmental impacts that will result and therefore justify approval of the proposed Project despite such impacts.
5. Findings regarding the Mitigation Monitoring and Reporting Program.

The City Council of the City of Lemoore certifies that these findings are based on its full appraisal and consideration of all viewpoints expressed in written correspondence and testimony regarding the proposed Project, including all comments received up to the date of adoption of these findings, concerning the environmental issues identified and discussed in the Final EIR. The City Council adopts the findings and the statement of overriding considerations for the approvals that are set forth below.

The detailed analysis of potentially significant environmental impacts and proposed mitigation measures for the Project is presented in Chapter 3, Environmental Setting, Impacts and Mitigation of the Draft EIR. Responses to comments on the Draft EIR, along with copies of the comments, are provided in Chapter Two of the Final EIR.

The EIR evaluated 20 major environmental categories for potential impacts as outlined in Appendix G of the *CEQA Guidelines*. Of these 20 major environmental categories, this City Council concurs with the conclusions in the EIR that the issues and sub issues discussed in Subsection 5.2, Subsection 5.3, and Subsection 5.4, below are either no impacts, less than significant without mitigation, or can be mitigated below a level of significance. For the remaining potential environmental impacts that cannot feasibly be mitigated below a level of significance discussed in Subsection 5.5, overriding considerations exist that make these potential impacts acceptable to this City Council.

## 5.2 No Environmental Impacts

The City Council hereby finds, based upon substantial evidence in the record including the EIR and as discussed below, that the following potential environmental areas result in no impacts by the Project and no mitigation is necessary or required.

### Agriculture and Forestry Resources

**Impact 3.1-2**: The Project would not conflict with existing zoning for agricultural use, or a Williamson Act contract.

**Facts and Findings:** The Project site is currently zoned as Limited Agricultural-10 District by Kings County and as a part of the Project, the Zone District will be changed to Low, Medium and High Density Residential and Parks/Recreation by the City of Lemoore. The new zoning would accommodate the proposed Project and as such, there would be no impact resulting from a zoning conflict.

The Project site is subject to a Williamson Act contract, pursuant to Government Code Section 51200 et seq. However, a protest was filed with the Local Agency Formation Commission (LAFCo) on December 1, 1982, in accordance with Section 51243.5 (a) of the Government Code, as amended, which will result in a dissolution of the Williamson Act Contract upon annexation of the subject site to the City.

With the dissolution of the Williamson Act Contract, there would be no conflict with a Williamson Act Contract and as such, no impacts to this subject area.

**Impact 3.1-3**: The Project would not conflict with existing zoning for, or cause rezoning of, forest land as defined in Public Resources Code section 12220(g), timberland as defined by Public Resources Code section 4526, or timberland zoned Timberland Production (as defined by Government Code section 51104(g)), or result in the loss of forest land or convert forest land to non-forest use.

**Facts and Findings:** There is no forest land zoning on the proposed Project site and there are no forest uses on the site. No loss of forest land would occur, and no conflicts with forest land zoning would occur. As such, there are no impacts related to this topic.

## 5.3 Less Than Significant Environmental Impacts

The City Council hereby finds, based on substantial evidence in the record including the EIR and as noted below, that the following potential environmental impacts of the Project are less than significant and therefore do not require the imposition of mitigation measures.

### Agriculture and Forestry Resources

**Impact 3.1-4:** The Project would not involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use.

**Facts and Findings:** The proposed Project site is located in an area that is dominated by farmland / agricultural operations and scattered rural residential housing to the north, east and west, and residential development to the south. The site is partially designated by the City of Lemoore General Plan for future residential uses and is currently zoned as Limited Agricultural-10 District (AL-10) by Kings County. Approximately one-third of the site (the southern one-third) is within the City's SOI while the remaining two-thirds are currently outside the SOI. The entire site is proposed for annexation into the City limits of Lemoore. According to the Agricultural Conversion Study prepared

for the Project, the site is substantially surrounded by Prime Farmland to the north, east and west. However, the requested General Plan Amendment, Zone Change, Sphere of Influence amendment, and annexation is site specific and does not apply to any properties other than the proposed Project site. Therefore, it is unlikely that the Project would result in the conversion of other farmland or forest land. Thus, the impact is less than significant and no mitigation is required.

## Air Quality

**Impact 3.2-1:** The Project would not conflict with or obstruct implementation of the applicable air quality plan.

**Facts and Findings:** In summary, the Project's air emissions are less than significant for all criteria pollutants and would not result in inconsistency with the San Joaquin Valley Air Pollution Control District's (SJVAPCD) Air Quality Plan (AQP). The Project complies with applicable control measures of the AQP and therefore, the Project would not conflict with or obstruct implementation of the AQP. In addition, the Project is consistent with City of Lemoore General Plan policies related to air quality that will help further the goals of the AQP. Thus, the impact is less than significant and no mitigation is required.

**Impact 3.2-2:** The Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.

**Facts and Findings:** Since the Air Basin is nonattainment for ozone, PM10, and PM2.5, it is considered to have an existing significant cumulative health impact without the Project. When this occurs, the analysis considers whether the Project's contribution to the existing violation of air quality standards is cumulatively considerable. The SJVAPCD regional thresholds for NOX, VOC, PM10, or PM2.5 are applied as cumulative contribution thresholds. Projects that exceed the regional thresholds would have a cumulatively considerable health impact. As shown in Table 3.2-6 and Table 3.2-7 of the Draft EIR, the regional analysis of construction and operational emissions indicates that the Project would not exceed the SJVAPCD's significance thresholds and the Project is consistent with the applicable Air Quality Plan. Thus, the impact is less than significant and no mitigation is required.

**Impact 3.2-3:** The Project would not expose sensitive receptors to substantial pollutant concentrations.

**Facts and Findings:** In summary, the Project would not exceed SJVAPCD localized emission daily screening levels for any criteria pollutant. The Project is not a significant source of Toxic Air Contaminant emissions during construction or operation. The Project is not in an area with suitable habitat for Valley fever spores and is not in area known to have naturally occurring asbestos. Therefore, the Project would result in less than significant impacts to sensitive receptors and no mitigation is required.

**Impact 3.2-4:** The Project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

**Facts and Findings:** During construction, the various diesel-powered vehicles and equipment in use on-site would create localized odors. These odors would be temporary and would not likely be noticeable for extended periods of time beyond the Project's site boundaries. The potential for diesel odor impacts would therefore be less than significant. As a residential development, the Project has the potential to place sensitive receptors near existing odor sources. Review of the area near the Project site found no major odor-generating sources (as listed in Table 3.2-10 of the Draft EIR) within screening distance of the site. Therefore, the uses in the vicinity of the Project would not cause substantial odor impacts to the Project. Thus, the impact is less than significant and no mitigation is required.

## Energy

**Impact 3.5-1**: The Project will not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation.

**Facts and Findings:** The Project would result in less than significant impacts on the wasteful, inefficient, or unnecessary use of energy due to Project design features that will comply with the City's design guidelines and regulations that apply to the Project such as Title 24 Building Energy Efficiency Standards and the California Green Building Standards Code that apply to commercial and residential buildings. The installation of solar panels required by 2019 Title 24 standards is expected to offset most electricity used by Project residences. Furthermore, various federal and state regulations including the Low Carbon Fuel Standard, Pavley Clean Car Standards, and Low Emission Vehicle Program would serve to reduce the transportation fuel demand by the Project.

With the adherence to the increasingly stringent building and vehicle efficiency standards as well as implementation of the Project's design features that would reduce energy consumption, the proposed

Project would not contribute to a cumulative impact to the wasteful or inefficient use of energy. As such, the Project would not result in a significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation and any impacts would be less than significant.

**Impact 3.5-2:** The Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

**Facts and Findings:** The City of Lemoore has not adopted local plans specifically addressing renewable energy and energy efficiency. However, the City of Lemoore 2030 General Plan includes goals and policies related to energy efficiency, including CD-I-58 (policy requiring new development to incorporate passive heating and natural lighting strategies) and CD-I-60 (policy requiring green building standards). The City of Lemoore 2030 General Plan was adopted in 2008. Since that time, Title 24 Building Energy Efficiency Standards have been revised on multiple occasions to increase the energy efficiency of buildings in California. The standards include provisions for windows, insulation, and lighting that have substantially increased the energy efficiency of residential and non-residential structures with the goal of producing all zero net energy buildings by 2030. Therefore, compliance with Title 24 would allow projects to be consistent with policies CD-I-59 and CD-I-60. The CalGreen Code adds additional sustainability requirements to development projects and will further support project consistency with these energy related policies. Therefore, the Project would not conflict with or obstruct the local plan for renewable energy or energy efficiency.

The Project was reviewed for consistency with State of California energy plans. The ARB 2008 Scoping Plan required by AB 32 and the ARB 2017 Scoping Plan provide the State's strategy for achieving legislated GHG reduction targets. Although the primary purpose of the Scoping Plans is to reduce GHG emissions, the strategies to achieve the GHG reduction targets rely on the use of increasing amounts of renewable fuels under the LCFS and RPS, and energy efficiency with updates to Title 24 and the CalGreen Code. The 2019 California Energy Efficiency Action Plan addresses issues pertaining to energy efficiency in California's buildings, industrial, and agricultural sectors. Buildings constructed to implement the Project will meet the latest efficiency standards. Vehicles and equipment will meet the latest fuel efficiency standards and use fuels subject to the LCFS.

The Project is consistent with applicable plans and policies and would not result in wasteful or inefficient use of nonrenewable energy sources; therefore, the impact is less than significant and no mitigation is required.

## Greenhouse Gas Emissions

**Impact 3.7-1:** The Project would not generate direct and indirect greenhouse gas emissions that would result in a significant impact on the environment.

**Facts and Findings:** The Project would achieve reductions of 29.4 percent beyond the ARB 2020 21.7 percent target and 21.4 percent beyond the SJVAPCD 29 percent reduction from BAU requirements from adopted regulations and on-site design features. No new threshold has been adopted by the City for the SB 32 2030 target; however, the reductions from BAU by 2038 are substantial with existing regulations and Project design features. Based on this progress and the strong likelihood that the measures included in the 2017 Scoping Plan Update will be implemented, it is reasonable to conclude that the Project is consistent with the 2017 Scoping Plan and will contribute a reasonable fair-share contribution to achieving the 2030 target. The fair share may very well be achieved through compliance with increasingly stringent State regulations that apply to new development, such as Title 24 and CALGreen; regulations on energy production, fuels, and motor vehicles that apply to both new and existing development; and voluntary actions to improve energy efficiency in existing development. In addition, compliance with the VMT targets adopted to comply with SB 375 and implemented through the RTP/SCS may be considered to adequately address GHG emissions from passenger cars and light-duty trucks. As shown in Table 3.7-5, the State strategy relies on the Cap-and-Trade Program to make up any shortfalls that may occur from the other regulatory strategies. The costs of Cap-and-Trade emission reductions will ultimately be passed on to the consumers of fuels, electricity, and products produced by regulated industries, which include future residents of development projects and other purchasers of products and services. Therefore, the impact would be less than significant and no mitigation is required.

**Impact 3.7-2:** The Project would not conflict with any applicable plan, policy, or regulation of an agency adopted to reduce the emissions of greenhouse gases.

**Facts and Findings:** The Project incorporates a number of features that would minimize GHG emissions. These features are consistent with project-level strategies identified by the ARB's Scoping Plan. The City of Lemoore 2030 General Plan was adopted in May 2008. The General Plan contains a number of goals or policies that relate directly to climate change and some of the policies in the Air Quality and Circulation Element of the General Plan would likely reduce GHG emissions as well as the other criteria pollutant emissions, because they attempt to reduce Vehicle Miles Traveled and increase energy efficiency. As shown in Table 3.7-6 of the Draft EIR, the Project is consistent with the feasible and applicable policies. Therefore, the impact would be less than significant and no mitigation is required.

## Hazards and Hazardous Materials

**Impact 3.8-3:** The Project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

**Facts and Findings:** Meadow Lane Elementary School is within ¼ mile of the proposed Project site. As noted in Section 3.2 – Air Quality of the Draft EIR, Project construction would involve the use of diesel-fueled vehicles and equipment that emit Diesel Particulate Matter, which is considered a Toxic Air Contaminant (TAC). The SJVAPCD's 2015 GAMAQI does not currently recommend analysis of TAC emissions from Project construction activities, but instead focuses on projects with operational emissions that would expose sensitive receptors over a typical lifetime of 70 years. Residential projects produce limited amounts of TAC emissions during operation and thus have not been subject to Project TAC analysis. Most emissions from construction activities occur during the grading and site preparation phases that occur over the first three months of construction of individual tracts and do not overlap with Project operations. The Project would not exceed SJVAPCD localized emission daily screening levels for any criteria pollutant. The Project is not a significant source of TAC emissions during construction or operation. Therefore, the Project would not result in significant impacts to sensitive receptors.

Based on the proposed Project description of a residential development, it is not reasonably foreseeable that the proposed Project will cause a significant impact by emitting hazardous waste or bringing hazardous materials within one-quarter mile of an existing or proposed school. Residential developments typically do not generate, store, or dispose of significant quantities of hazardous materials. Such uses also do not normally involve dangerous activities that could expose persons onsite or in the surrounding areas to large quantities of hazardous materials. Therefore, the impact is less than significant and no mitigation is required.

**Impact 3.8-4:** The Project would not be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.

**Facts and Findings:** The proposed Project site is not located on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (Geotracker and DTSC Envirostor databases). The nearest Department of Toxic Substances Control listed site is the Gateway Plaza Cleanup Site (Geotracker identified the hazardous substance at this location as "Dichloroethene"). The site address is 1104-1290 North Lemoore Avenue and is approximately one-half mile south of the Project site. The site is listed as Open – Site Assessment as of 2/5/2016. There are no hazardous

materials sites that impact the Project. Therefore, the impact is less than significant and no mitigation is required.

**Impact 3.8-5:** The Project is not located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, and the Project would not result in a safety hazard or excessive noise for people residing or working in the project area.

**Facts and Findings:** The nearest public airport is the Hanford Municipal Airport in Hanford, approximately eight miles east of the Project site. The nearest private airport is the Swanson Ranch NR 2 Airport, approximately 8.6 miles to the northwest. Swanson Ranch NR 1 Airport is approximately 10 miles to the northeast. There are no public or private airport land use plans that are applicable to the Project.

The Lemoore Naval Air Station (NAS) Boundary is approximately nine miles to the west of the Project site. According to the *NAS Lemoore Joint Land Use Study* (2011), development within three miles of the NAS boundary is restricted. As shown in Figure 3-2 of the Study, the Project site is outside of the three-mile buffer area and therefore, there are no Project-related development restrictions pertaining to the NAS. Therefore, the impact is less than significant and no mitigation is required.

**Impact 3.8-6:** The Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

**Facts and Findings:** The City of Lemoore's Emergency Operations Plan (EOP) provides guidance to City staff in the event of extraordinary emergency situation associated with natural disaster and technological incidents. The EOP concentrates on operation concepts and response procedures relative to large-scale disasters. In the event of a county-wide disaster, the City is to assume its role assigned in the Kings County EOP. The proposed Project would also comply with the appropriate local and State requirements regarding emergency response plans and access. The Project would not inhibit the ability of local roadways to continue to accommodate emergency response and evacuation activities and as such, the Project would not interfere with the City's adopted emergency response plan. Therefore, the Project will have a less than significant impact and no mitigation is required.

**Impact 3.8-7:** The Project would not expose people or structures either directly or indirectly to a significant risk of loss, injury or death involving wildland fires.

**Facts and Findings:** Wildfire hazard data for the City of Lemoore is provided by the California Department of Forestry and Fire Protection. The majority of the City is considered to have either little or no threat or a moderate threat of wildfire. According to the City of Lemoore 2030 General Plan Hazards and Safety Services Figure 8-2 (of the General Plan), neither the proposed Project nor its vicinity have a high wildfire threat. In addition, and as described in the Environmental Setting section, only a very small portion of land within Kings County (located in the far southwest corner of the County) is designated as a Very High Fire Hazard Severity Zone by the Local Responsibilities Area mapping program. Additionally, according to CAL FIRE, the nearest State Responsibility Area mapped land is on the west side of State Route 33, approximately 30 miles to the southwest of the Project site at its nearest point. There are no other factors of the proposed Project or the surrounding area that would exacerbate wildfire or the uncontrolled spread of a wildfire. Therefore, the impact is less than significant and no mitigation is required.

## Hydrology and Water Quality

**Impact 3.9-4**: The Project would not result in flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation.

**Facts and Findings:** The Project is not located within a flood hazard area, tsunami or seiche zone. Figure 3.9-1 of the Draft EIR shows the Project site outside of any flood zones and thus does not represent a significant risk of flooding to the development. The site is also located more than 75 miles from the nearest ocean that could cause a tsunami and there are no bodies of water near the Project site that would represent any impacts related to seiche zones. Therefore, the impact is less than significant and no mitigation is required.

## Land Use and Planning

**Impact 3.10-1**: The Project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

**Facts and Findings:** The City of Lemoore General Plan and Zoning Ordinance establish land use policies and regulations that are applicable to the proposed Project. Upon annexation, the Project will be subject to the land use plans, policies and regulations of these documents. Based on the consistency analysis in Section 3.10 of the Draft EIR, it is determined that the proposed Project is consistent with respective general plan objectives and policies and will not significantly conflict with applicable land use plans, policies or regulations of the City of Lemoore. Furthermore, the proposed

Project, including the design and improvement of the subject property, is found; (1) To be consistent with the goals, objectives and policies of the Lemoore General Plan; (2) To be suitable for the type and density of development; (3) To be safe from potential cause or introduction of serious public health problems; and, (4) To not conflict with any public interests in the subject property or adjacent lands. Therefore, the impact is less than significant and no mitigation is required.

## Noise

**Impact 3.11-2**: The Project would not result in the generation of excessive groundborne vibration or groundborne noise levels.

**Facts and Findings:** The dominant sources of man-made vibration are sonic booms, blasting, pile driving, pavement breaking, demolition, diesel locomotives, and rail-car coupling. None of these sources are anticipated from the Project site. It is unlikely that vibration from construction activities could be detected at the closest sensitive land uses. After full Project build out, it is not expected that ongoing operational activities will result in any vibration impacts at nearby sensitive uses. Any impacts would be less than significant and no mitigation is required.

**Impact 3.13-3**: The Project is not located within the vicinity of a private airstrip or an airport land use plan. Where such plan has not been adopted, the Project is not within two miles of a public airport or public use airport, and would not expose people residing or working in the Project area to excessive noise levels.

**Facts and Findings:** The Project is not located within two miles of a public airport or private airstrip. The Project is located approximately 7 miles east of the NASL-facility. As noted in the AICUZ report, Figure 4-1, the site is outside identified Noise Contour zones. Although aircraft from NAS- Lemoore will fly overhead, the Project would not expose residents to excessive noise levels from aircraft or military operations. Therefore, the impact is less than significant and no mitigation is required.

## Population and Housing

**Impact 3.12-1**: The Project would not induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).

**Facts and Findings:** For purposes of evaluating the environmental impact of population growth in Lemoore under CEQA, the question becomes whether or not the Project will induce population beyond what the City has or will plan for and/or can accommodate at full buildout of the Project. The assessment takes into account Project-related impacts to topics like traffic, water supply, public services (police, fire, etc.), sewer / storm drain capacity, and other related topics, as the City has prepared infrastructure Master Plans based on buildout of the City's General Plan. As shown in Section 3.12 (Population and Housing) of the Draft EIR, the anticipated population and housing unit increase associated with the proposed Project is within the growth projections of the City's 2030 General Plan.

While other future residential developments are also likely to occur in the City, it is anticipated that the City can accommodate the Project and other residential developments in the City. The General Plan anticipated a population of up to 48,250 people with up to 16,300 residential units by 2030. Given the City's current population (27,038 persons) and housing stock (9,535 units), the City could accommodate the proposed Project plus an additional 18,654 persons and 5,940 housing units according to the City's General Plan. Based on the City's General Plan, infrastructure master planning documents, and the City's Housing Element, it is determined that the proposed Project will not induce unplanned population growth beyond that which can be accommodated by the City. Therefore, the impact is less than significant and no mitigation is required.

## Transportation

**Impact 3.14-3**: The Project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

**Facts and Findings:** Access to and from the Project site will be from eight main access points. All proposed internal roadways will be constructed to meet local and State standards and requirements. No sharp roadway curves currently exist in the proposed Project area, nor would such curves be created by the proposed Project. No roadway design features associated with this proposed Project would result in an increase in hazards due to a design feature or be an incompatible use. The internal road system has been designed with traffic calming features such as curved roadways, mini-circles at some intersections and relatively short blocks of housing. There are no non-residential uses (such as farm equipment) associated with the Project. Therefore, the impact is less than significant and no mitigation is required.

## Utilities and Service Systems

**Impact 3.16-4**: The Project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.

**Facts and Findings:** The proposed Project would construct up to 825 residential dwellings. According to the Kings County Solid Waste Division, solid waste within their jurisdiction was estimated at 1,994 pounds per capita per year. Based on that figure, the Project would produce approximately 5,100,652 pounds of solid waste per year (1,994 pounds X 2,558 persons = 5,100,652 pounds). This equates to approximately 13,974 pounds per day (5,100,652 pounds / 365 days = 13,974 pounds) or approximately 7 tons per day (TPD). As previously described, the existing landfill is permitted to receive a maximum of 2,000 TPD but typically receives an average of only about 1,350 TPD. The Project's contribution would be approximately 0.0035% of the daily maximum permitted capacity of 2,000 TPD and 0.005% of the average daily amount of 1,350 TPD. As such, there is adequate capacity to accommodate the solid waste demands of the proposed Project.

The proposed Project would be required to comply with applicable State and local regulations, including regulations pertaining to disposal of recyclable materials. With adequate landfill capacity at existing landfills and compliance with regulations, a less than significant impact would occur. Therefore, the impact is less than significant and no mitigation is required.

**Impact 3.16-5**: The Project will comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

**Facts and Findings:** The 1989 California Integrated Waste Management Act (AB 939) requires Kings County to attain specific waste diversion goals. In addition, the California Solid Waste Reuse and Recycling Access Act of 1991, as amended, requires expanded or new development projects to incorporate storage areas for recycling bins into the project design. The proposed Project would be required to comply with all federal, State, and local statutes and regulations related to the handling and disposal of solid waste. Therefore, the impact is less than significant and no mitigation is required.

## Wildfire

**Impact 3.20-1**: The Project would not substantially impair an adopted emergency response plan or emergency evacuation plan.

**Facts and Findings:** The Project has been designed for adequate emergency access and will be reviewed by the City prior to final design. Emergency access will be maintained at all times both during construction and operation. The Project will not impair or physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, the impact is less than significant and no mitigation is required.

**Impact 3.20-2**: Due to slope, prevailing winds, and other factors, the Project would not exacerbate wildfire risks, and thereby expose Project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

**Facts and Findings:** Wildfire hazard data for the City of Lemoore is provided by the California Department of Forestry and Fire Protection. The majority of the City is considered to have either little or no threat or a moderate threat of wildfire. According to the City of Lemoore 2030 General Plan Hazards and Safety Services Figure 8-2 (of the General Plan), the proposed Project nor its vicinity have a high wildfire threat. There are no other factors of the proposed Project or the surrounding area that would exacerbate wildfire or the uncontrolled spread of a wildfire. The proposed Project site is flat, with no topographic relief, which precludes post-fire slope instability. The Project site is not located near the ocean or a steep topographic feature. Additionally, there is no body of water within the Project vicinity. Therefore, the impact is less than significant and no mitigation is required.

**Impact 3.20-3:** The Project would not require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.

**Facts and Findings:** The proposed Project would require the installation or maintenance of additional distribution lines to connect the residences to the existing utility grid; however, the Project would be constructed in accordance with all local and State regulations regarding power lines and other related infrastructure, as well as fire suppression requirements. The Project site is located on irrigated land that is adjacent to roadways, agricultural lands, and residential housing. The installation of infrastructure associated with the Project is typical of residential developments and would not significantly increase fire risk. The infrastructure would be installed according to applicable fire safety regulations. Therefore, the impact is less than significant and no mitigation is required.

**Impact 3.20-4:** The Project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

**Facts and Findings:** The proposed Project site is flat, with no topographic relief, which precludes post-fire slope instability. The Project site is not located near the ocean or a steep topographic feature. Additionally, there is no body of water within the Project vicinity. The proposed Project will not expose people or structures to risks of flooding, landslides, runoff, slope instability, drainage changes; or exacerbate wildfire risks. Therefore, the impact is less than significant and no mitigation is required.

## 5.4 Less Than Significant Environmental Impacts With Mitigation

Public Resources Code Section 21081 states that no public agency shall approve or carry out a project for which an EIR has been completed that identifies one or more significant effects unless the public agency makes one or more of the following findings:

- Changes or alternations have been required in, or incorporated into, the Project that mitigate or avoid the significant effects on the environment.
- Those changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency.
- Specific economic, legal, social, technological, or other considerations make infeasible the mitigation measures or alternatives identified in the EIR, and overriding economic, legal, social, technological, or other benefits of the Project outweigh the significant effects on the environment.

The following issues from the environmental categories analyzed in the EIR were found to be potentially significant, but can be mitigated to a less than significant level with the imposition of mitigation measures. This City Council hereby finds, based on substantial evidence in the record including the EIR and as noted below, pursuant to Public Resources Code Section 21081 that all potentially significant impacts listed below can and will be mitigated to below a level of significance by imposition of the mitigation measures in the EIR; and that these mitigation measures are included as Conditions of Approval and set forth in the MMRP adopted by this City Council. Specific findings of this City Council for each category of such impacts are set forth in detail, below.

## Biological Resources

**Impact 3.3-1:** After mitigation, the Project would not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service.

**Finding:** Implementation of the following mitigation measures will reduce potential impacts to a less than significant level.

**Mitigation Measures:** BIO – 1, BIO – 2, BIO – 3, BIO – 4, BIO – 5 and BIO – 6.

**Facts in Support of the Finding:** Species such as tricolor blackbird, San Joaquin kit fox, American badger, western burrowing owl and various other bird species are not likely to inhabit the site. However, there is a potential for special-status species to be present as residents or transients and for migratory birds to nest on and near the Project Site. Although the Project footprint is highly disturbed and contains low-quality burrowing and foraging habitat, suitable nesting and foraging habitat exists within the adjacent lands within, Mitigation Measures BIO-1 through BIO-6 are recommended which, when implemented, would reduce Project impacts to biological resources to less than significant levels.

The remaining species, the State listed as threatened Swainson's hawk (*Buteo swainsoni*), is known to nest within 5 miles of the Project site and use alfalfa fields similar to those on the Project site as foraging habitat. Therefore, the potential for this species to occur on or near the Project site is high. Swainson's hawks have a low potential to nest on the Project site but could use the site for foraging. If present during construction activities, the Project would have the potential to directly impact this listed raptor species through mortality or injury which would be a significant impact. Potential impacts would be avoided through impact minimization measures such as preconstruction surveys through the implementation of Mitigation Measure BIO-1 through BIO-6 and would ensure that potential impacts remain less than significant.

**Impact 3.3-2:** After mitigation, the Project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service, or have a substantial adverse effect on federally or state-protected wetlands (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

**Finding:** Implementation of the following mitigation measures will reduce potential impacts to a less than significant level.

**Mitigation Measures:** BIO – 7.

**Facts in Support of the Finding:** An unnamed irrigation ditch lies within 50 feet of the southeastern corner of the Project site. There are no other bodies of water on or near the immediate vicinity of the Project site. The Project will require a 50-foot easement for irrigation water to Lemoore Canal & Irrigation District Company as the above-ground canal along a portion of the western and southern boundary will be abandoned and relocated into an underground pipe through the Project site. The irrigation ditch is distributional from the Lemoore Canal to the east, which distributes water from the Kings River to the north. A formal delineation of wetlands or water features that may be impacted by the Project was not conducted during the reconnaissance survey of the Project. As such, a formal field delineation of waters of the State and waters of the U.S. would determine whether permits would be required from the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), or California Department of Fish and Wildlife (CDFW) for development within this area. BIO-7 requires a delineation of the drainage and determination of jurisdiction prior to the issuance of grading permits. If the drainage is jurisdictional, additional permitting with the appropriate regulatory agencies is also required prior to construction activities. With implementation of BIO-7, impacts of the Project to waters and wetlands would be less than significant.

**Impact 3.3-3:** After mitigation, the Project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery site.

**Finding:** Implementation of the following mitigation measures will reduce potential impacts to a less than significant level.

**Mitigation Measures:** BIO – 4, BIO – 5 and BIO – 6.

**Facts in Support of the Finding:** The Project site is surrounded by development and is highly disturbed. Although the Project is located within the Pacific Flyway, it is very small in comparison to the Flyway, which covers all of California. The Project is low-lying and is not expected to impact avian migratory movements within the Flyway.

The Project is not located within a mapped wildlife movement corridor or linkage. As noted previously, the above-ground canal along a portion of the western and southern boundary will be impacted by the Project. Local irrigation canals and ditches may be used by local wildlife to travel

through the vicinity. To reduce impacts to biological resources, BIO-1 through BIO-6 will be implemented.

The irrigation ditch offers wildlife a corridor for movement to or from the site. However, there is no other body of water in the immediate vicinity of the Project site, which precludes amphibians, fishes and crustaceans. Due to the disturbed nature of the site and consistent vegetation removal, nesting capabilities of protected birds, including migratory birds, is considered severely limited. However unlikely, migratory birds, including tricolor and yellow headed blackbirds, could nest on or near the Project site. Such species include, but are not limited to, mourning dove (*Zenaida macroura*), red-tailed hawk (*Buteo jamaicensis*), and California scrubjay (*Aphelocoma californica*). Implementation of Mitigation Measures BIO-4 through BIO-6 will ensure that Project related impacts remain less than significant.

**Impact 3.3-4:** After mitigation, the Project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

**Finding:** Implementation of the following mitigation measures will reduce potential impacts to a less than significant level.

**Mitigation Measures:** BIO – 4, BIO – 5 and BIO – 6.

**Facts in Support of the Finding:** The Project site is surrounded by development and is highly disturbed. Although the Project is located within the Pacific Flyway, it is very small in comparison to the Flyway, which covers all of California. The Project is low-lying and is not expected to impact avian migratory movements within the Flyway.

The Project is not located within a mapped wildlife movement corridor or linkage. As noted previously, the above-ground canal along a portion of the western and southern boundary will be impacted by the Project. Local irrigation canals and ditches may be used by local wildlife to travel through the vicinity. To reduce impacts to biological resources, BIO-1 through BIO-6 will be implemented.

The irrigation ditch offers wildlife a corridor for movement to or from the site. However, there is no other body of water in the immediate vicinity of the Project site, which precludes amphibians, fishes and crustaceans. Due to the disturbed nature of the site and consistent vegetation removal, nesting capabilities of protected birds, including migratory birds, is considered severely limited. However unlikely, migratory birds, including tricolor and yellow headed blackbirds, could nest on or near the Project site. Such species include, but are not limited to, mourning dove (*Zenaida macroura*), red-tailed hawk (*Buteo jamaicensis*), and California scrubjay (*Aphelocoma californica*). Implementation of

Mitigation Measures BIO-4 through BIO-6 will ensure that Project related impacts remain less than significant.

**Impact 3.3-5:** After mitigation, the Project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

**Finding:** Implementation of the following mitigation measures will reduce potential impacts to a less than significant level.

**Mitigation Measures:** BIO – 4, BIO – 5 and BIO – 6.

**Facts in Support of the Finding:** The Project site is surrounded by development and is highly disturbed. Although the Project is located within the Pacific Flyway, it is very small in comparison to the Flyway, which covers all of California. The Project is low-lying and is not expected to impact avian migratory movements within the Flyway.

The Project is not located within a mapped wildlife movement corridor or linkage. As noted previously, the above-ground canal along a portion of the western and southern boundary will be impacted by the Project. Local irrigation canals and ditches may be used by local wildlife to travel through the vicinity. To reduce impacts to biological resources, BIO-1 through BIO-6 will be implemented. There are no other habitat conservation plans that are applicable to the Project.

The irrigation ditch offers wildlife a corridor for movement to or from the site. However, there is no other body of water in the immediate vicinity of the Project site, which precludes amphibians, fishes and crustaceans. Due to the disturbed nature of the site and consistent vegetation removal, nesting capabilities of protected birds, including migratory birds, is considered severely limited. However unlikely, migratory birds, including tricolor and yellow headed blackbirds, could nest on or near the Project site. Such species include, but are not limited to, mourning dove (*Zenaida macroura*), red-tailed hawk (*Buteo jamaicensis*), and California scrubjay (*Aphelocoma californica*). Implementation of Mitigation Measures BIO-4 through BIO-6 will ensure that Project related impacts remain less than significant.

## Cultural Resources

**Impact 3.4-1**: After mitigation, the Project would not cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5.

**Finding:** Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

**Mitigation Measures:** CUL – 1, CUL – 2 and CUL – 3.

**Facts in Support of the Finding:** According to the records search performed for the Project, a very small portion of the southwest corner of the study area was adjacent to a portion of an earlier linear survey, resulting in one previously recorded resource within the study area, a segment of the Lemoore Canal. However, the Project will not impact the Canal in that area. The Project parcel itself had not been previously surveyed and no resources had been documented within it. No other studies had been conducted within 0.5 mi. of the study area. The intensive field survey performed on behalf of the Project did not result in the identification of cultural resources.

Additionally, the study area was evaluated by Caltrans in 2010 and was identified as having "Low to Moderately Low" sensitivity for subsurface deposits. Given its low sensitivity for buried deposits according to this analysis, it is therefore unlikely that the Project study area would contain subsurface archaeological deposits.

Although construction and operation would occur on previously disturbed land, unknown historical resources may be discovered during ground-disturbing activities. In order to account for unanticipated discoveries and the potential to impact previously undocumented or unknown resources, the mitigation measures CUL – 1 through CUL – 3 are recommended. With the implementation of mitigation measures CUL-1 through CUL-3, impacts would be less than significant.

**Impact 3.4-2**: After mitigation, the Project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5.

**Finding:** Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

**Mitigation Measures:** CUL – 1, CUL – 2 and CUL – 3.

**Facts in Support of the Finding:** According to the records search performed for the Project, a very small portion of the southwest corner of the study area was adjacent to a portion of an earlier linear survey, resulting in one previously recorded resource within the study area, a segment of the Lemoore Canal. However, the Project will not impact the Canal in that area. The Project parcel itself had not been previously surveyed and no resources had been documented within it. No other studies had been conducted within 0.5 mi. of the study area. The intensive field survey performed on behalf of the Project did not result in the identification of cultural resources.

Additionally, the study area was evaluated by Caltrans in 2010 and was identified as having "Low to Moderately Low" sensitivity for subsurface deposits. Given its low sensitivity for buried deposits according to this analysis, it is therefore unlikely that the Project study area would contain subsurface archaeological deposits.

Although construction and operation would occur on previously disturbed land, unknown historical resources may be discovered during ground-disturbing activities. In order to account for unanticipated discoveries and the potential to impact previously undocumented or unknown resources, the mitigation measures CUL – 1 through CUL – 3 are recommended. With the implementation of mitigation measures CUL-1 through CUL-3, impacts would be less than significant.

**Impact 3.4-3**: After mitigation, the Project would not disturb any human remains, including those interred outside of formal cemeteries.

**Finding:** Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

**Mitigation Measures:** CUL – 4.

**Facts in Support of the Finding:** California Health and Safety Code Section 7050.5, CEQA Section 15064.5, and Public Resources Code Section 5097.98 mandate the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery. Specifically, California Health and Safety Code Section 7050.5 requires that in the event that human remains are discovered within a project site, disturbance of the site shall remain halted until the coroner has conducted an investigation into the circumstances, manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code. If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes or has reason to believe the human remains to be those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission. Although soil-disturbing activities associated with development in accordance with the proposed project could result in the discovery of human remains, compliance with existing law would ensure that impacts to human remains would not be significant.

Project development would occur on existing disturbed lands; however, further disturbance could potentially uncover human remains. This would be a potentially significant impact. Implementation of mitigation measure CUL-4 will reduce the impact to a less than significant level.

## Geology and Soils

**Impact 3.6-1**: After mitigation, the Project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

ii. Strong seismic ground shaking?
iii. Seismic-related ground failure, including liquefaction?
iv. Landslides?

**Finding:** Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

**Mitigation Measures:** GEO – 1.

**Facts in Support of the Finding:**

Fault Rupture

The Project site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone. There are no known major or active faults crossing the site or in close proximity to the site.

Strong Ground Shaking

The closest active fault is the Nunez fault located in western Fresno County. The Nunez fault is a 4.2-km-long, north-south-trending, right-reverse, oblique-slip fault situated about 8 miles northwest of Coalinga. Surface rupture occurred along this fault in the 1983 Coalinga earthquakes, which had a magnitude of 6.7. This was followed by another earthquake with magnitude of 6.0 in 1985. The location of this fault, however, is far away from Lemoore and aftershocks during both earthquakes did not cause any damage.

New structures are required to adhere to current California Uniform Building Code (CUBC) standards, providing adequate design, construction and maintenance of structures to prevent exposure of people and structures to major geologic hazards. The use of flexible utility connections, building anchors, and adequately reinforced concrete can reduce the loss of life and damage to buildings for human occupancy. The requirements of Zone II of the Uniform Building Code are considered adequate for normal facilities in the Lemoore Planning Area.

In addition, Mitigation Measure GEO-1 would require a final design-level geotechnical report evaluating soil conditions and geologic hazards, performed by a California licensed geotechnical engineer consistent with CUBC requirements. GEO-1 would also require a California geotechnical engineer be hired by the project proponent to design project facilities to withstand probable seismically induced ground shaking. All grading and construction on site would adhere to the specifications, procedures, and site conditions contained in the final design plans, which would be fully compliant with the seismic recommendations provided by the California-registered professional engineer in accordance with California and the City Building Code requirements. The required measures would encompass site preparation, foundation specifications, and protection measures for any buried metal. The final structural designs would be subject to approval and follow-up inspection by the City Building Inspection Division. Final design requirements would be provided to the on-site construction supervisor and the City Building Inspector to ensure compliance. A copy of the approved design would be submitted to the City Community Development Department.

Therefore, with foundation and structural design in accordance with the City of Lemoore General Plan, current CUBC standards and implementation of Mitigation Measure GEO-1, ground shaking impacts on the proposed Project area would be less than significant.

<u>Seismic Related Ground Failure (including Liquefaction)</u>

The potential for seismic related ground failure (liquefaction, lateral spreading, and lurching) occurring on the Project site is minimal because of the absence of high groundwater levels and saturated loose granular soil on the Project site. In addition, the intensity of ground shaking from a large, distant earthquake is expected to be relatively low on the Project site and, therefore, would not be severe enough to induce liquefaction onsite. These characteristics indicate that the Project site has a low susceptibility to liquefaction and liquefaction-related phenomena. Regardless, Mitigation Measure GEO-1 requires the applicant to prepare and submit a design-level geotechnical study that complies with all seismic design standards of the California Building Standards Code. This measure provides certainty that the proposed Project would not be at risk of ground failure hazard. This measure would reduce any risk of significant impact from seismic related ground failure to less than significant.

<u>Landsliding</u>

There are no substantial slopes on or near the Project site. Therefore, the opportunity for slope failure in response to the long-term geologic cycle of uplift, mass wasting, and difference of slopes is unlikely. Mitigation Measure GEO-1 requires the applicant to prepare and submit a design-level geotechnical study that complies with all applicable seismic design standards of the California Building Standards

Code; this would ensure that design features would not present a geological hazard. With implementation of this measure, impacts would be reduced to a less than significant level.

**Impact 3.6-2**: After mitigation, the Project would not result in substantial soil erosion or the loss of topsoil.

**Finding:** Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

**Mitigation Measures:** GEO – 2.

**Facts in Support of the Finding:** Construction activities associated with the Project involves ground preparation work for the new housing development and associated improvements. These activities could expose barren soils to sources of wind or water, resulting in the potential for erosion and sedimentation on and off the Project site. During construction, nuisance flow caused by minor rain could flow off-site. The City and/or contractor would be required to employ appropriate sediment and erosion control BMPs as part of a Stormwater Pollution Prevention Plan (SWPPP) that would be required in the California National Pollution Discharge Elimination System (NPDES). In addition, soil erosion and loss of topsoil would be minimized through implementation of the SVJAPCD fugitive dust control measures (See Section 3.2 of the Draft EIR). Once construction is complete, the Project would not result in soil erosion or loss of topsoil. Mitigation Measure GEO – 2 (requirement to prepare a SWPPP) will ensure that impacts remain less than significant.

**Impact 3.6-3:** The Project is not located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

**Finding:** Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

**Mitigation Measures:** GEO – 1.

**Facts in Support of the Finding:** The site is not at significant risk from earthquakes, ground shaking, liquefaction, or landslide and is otherwise considered geologically stable. Subsidence is typically related to over-extraction of groundwater from certain types of geologic formations where the water is partly responsible for supporting the ground surface. However, the site may be subject to soil hazards including existing fills and settlement potential that could adversely impact proposed structures.

Mitigation Measure GEO – 1 (requirement for a design level geotechnical analysis) will reduce impacts to a less than significant level.

**Impact 3.6-4:** The Project is not located on expansive soil, as defined in Table 18-1-B of the most recently adopted Uniform Building Code creating substantial risks to life or property.

**Finding:** Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

**Mitigation Measures:** GEO – 1.

**Facts in Support of the Finding:** The site is not at significant risk from expansive soils and is otherwise considered geologically stable. However, the site may be subject to soil hazards including existing fills and settlement potential that could adversely impact proposed structures. Mitigation Measure GEO – 1 (requirement for a design level geotechnical analysis) will reduce impacts to a less than significant level.

**Impact 3.6-5:** The Project would not directly or indirectly destroy a unique paleontological resource or site or unique geological feature.

**Finding:** Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

**Mitigation Measures:** GEO – 3.

**Facts in Support of the Finding:** Paleontological resources are valued for the information they yield about the history of the earth and its past ecological settings. There are currently no unique geologic features located in the Project Area. The Lemoore General Plan notes that The University of California Museum of Paleontology lists 751 localities where fossils have been found in Kings County. At least one of these localities is documented to be in the Planning Area and others can be assumed. Therefore, there is the potential to encounter unidentified fossils during construction of new development.

There is a possibility that future ground-disturbing activities could cause damage to, or destruction of, previously undiscovered paleontological resources or unique geologic features. Implementation of Mitigation Measure GEO-3 would reduce potential impacts to a less-than significant level. In addition, the Lemoore General Plan policies and guidelines direct the City to require construction to stop immediately if paleontological resources are uncovered during grading or other onsite excavation

activities, until appropriate mitigation is implemented. Therefore, with Mitigation Measure GEO-3, impacts would be less than significant.

## Hazards and Hazardous Materials

**Impact 3.8-1**: After mitigation, the Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

**Finding:** Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

**Mitigation Measures:** GEO – 2.

**Facts in Support of the Finding:** This impact is associated with hazards caused by the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

*Construction*

Proposed Project construction activities may involve the use and transport of hazardous materials. These materials may include fuels, oils, mechanical fluids, and other chemicals used during construction. Transportation, storage, use, and disposal of hazardous materials during construction activities would be required to comply with applicable federal, State, and local statutes and regulations. Compliance would ensure that human health and the environment are not exposed to hazardous materials. In addition, the Project would be required to comply with GEO-2, which ensures the Project adhere to the National Pollutant Discharge Elimination System (NPDES) permit program through the submission and implementation of a Stormwater Pollution Prevention Plan during construction activities to prevent contaminated runoff from leaving the Project site. Therefore, no significant impacts would occur during construction activities.

*Operation*

The operational phase of the proposed Project would occur after construction is completed and residents move in to occupy the structures on a day-to-day basis. The proposed Project includes land uses that are considered compatible with the surrounding uses, including single and multi-family residential uses, open space and natural drainage areas. None of these land uses routinely transport, use, or dispose of hazardous materials, or present a reasonably foreseeable release of hazardous materials, with the exception of common residential grade hazardous materials such as cleaners, paint, petroleum products, etc. The proposed Project would not create a significant hazard through the

routine transport, use, or disposal of hazardous materials, nor would a significant hazard to the public or to the environment through the reasonably foreseeable upset and accidental conditions involving the likely release of hazardous materials into the environment occur.

Compliance with all federal, State and local regulations, and the City of Lemoore 2030 General Plan Implementing Policies SN-I-18 through SN-I-21 in the Safety and Noise Element would ensure that the Project would not cause an adverse effect on the environment with respect to the use, storage, or disposal of general household and commercial hazardous substances generated from future development or uses.

Therefore, the proposed Project will not create a significant hazard to the public or the environment and any impacts would be less than significant after mitigation.

**Impact 3.8-2**: After mitigation, the Project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

**Finding:** Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

**Mitigation Measures:** HAZ – 1, HAZ – 2 and HAZ – 3.

**Facts in Support of the Finding:** A Phase I Environmental Site Assessment (Phase I ESA) was prepared for the Project. The results of the Phase I ESA are summarized as follows:

<u>Recognized Environmental Conditions</u>

A recognized environmental condition (REC) refers to the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: due to release to the environment; under conditions indicative of a release to the environment; or under conditions that pose a material threat of a future release to the environment.

<u>Controlled Recognized Environmental Conditions</u>

A controlled recognized environmental condition (CREC) refers to a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls. No CRECs were identified on the Project site.

Historical Recognized Environmental Conditions

A historical recognized environmental condition (HREC) refers to a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls. No HREC's were identified on the Project site.

Environmental Issues

An environmental issue refers to environmental concerns identified by the Phase I ESA, which do not qualify as RECs; however, warrant further discussion. The following was identified during the course of the Phase I assessment:

- According to information obtained from the California Department of Conservation- Geologic Energy Management Division (CalGEM) Well Finder Database, a plugged and abandoned oil/gas well is located on the subject property. According to records available from the CalGEM Well Finder Database, the well, identified as Kreyenhagen 23-35, was drilled to a depth of 9,090 feet bgs on April 1, 1964 and was subsequently abandoned in on May 16, 1964. Review of the CalGEM records indicates that no oil or gas was encountered during the development of the well.

  The presence of the well on the subject property represent a potential for environmental concerns if 1) drill cuttings (muds) were stored on the subject property and 2) emission of methane and hydrogen sulfide gases are likely to impact the subject property. During oil well drilling of this type, it was common practice to deposit the drill cuttings in a large excavation near the location of the well, commonly referred to as drilling mud pits. The drill cuttings could potentially contain elevated levels of crude oil, petroleum hydrocarbons, and metals. An additional issue of concern with oil/gas wells is the potential emission of methane and hydrogen sulfide gases. These gases can migrate through geologic materials and/or through pathways such as old oil wells, fissures, and fractures in underlying geologic formations. The emitted gases have the potential to accumulate within building interiors or basements and adversely affect human health. However, due to the fact that the well did not produce oil or gas, potential emissions of methane and hydrogen sulfide gases are not expected to represent a significant environmental concern at this time. However, the likely presence of drilling mud pits in connection with the wells is considered a REC, as they represent conditions indicative of a release to the environment. It should be noted that the owner/operator of the well would likely be responsible for any future well abandonment activities, including any subsurface investigations and/or remediation related to potential contamination associated with drilling

mud pits on the subject property. CalGEM may require the re-abandonment of the wells to current abandonment guidelines should future development on the subject property "prevent or impede access to the well for purposes of remedying a currently perceived future problem".

- During the February 27, 2019 site reconnaissance, a diesel-powered irrigation well connected to an approximately 10,000-gallon diesel AST was observed within the central portion of the subject property. The AST was observed to be placed over the unpaved ground surface absent secondary containment. A minor release of apparent diesel fuel was observed on the unpaved ground surface beneath a valve on the northern end of the AST. This area of staining was limited in extent and is considered a *de minimis* condition. Heavy oily surface staining from apparent lubrication oil was observed beneath and around the associated diesel engine on the southern side of the AST, and around the irrigation well pump. The vertical extent of the staining in these areas could not be determined. However, lubrication oil does not typically migrate easily in the subsurface and is not expected to have migrated to significant depth. Based on this information, the staining observed around the AST, engine, and well pump is considered a *de minimis* condition.

- The subject property has been utilized for agricultural purposes since at least 1950. There is a potential that agricultural related chemicals such as pesticides, herbicides, and fertilizers, may have been used and stored on-site. Agricultural chemicals in use today are commonly selected using a licensed pest control advisor and are reported to the Agricultural Commissioner. It is unknown if environmentally persistent pesticides and/or herbicides were historically applied to the crops grown on the subject property. However, there is a low potential for soil contamination at concentrations in excess of regulatory thresholds as a result of the past use of persistent pesticides/herbicides from normal crop application. Furthermore, no specific areas of concern for agricultural chemical use have been identified during the course of this assessment. Based on these factors, the previous agricultural use of the subject property is not expected to represent a significant environmental concern at this time.

After implementation of Mitigation Measures HAZ-1 through HAZ-3, the Project's impacts would be reduced to a less than significant level.

## Hydrology and Water Quality

**Impact 3.9-1:** After mitigation, the Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.

**Finding:** Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

**Mitigation Measures:** BIO – 7 and GEO – 2.

**Facts in Support of the Finding:** The Project has the potential to impact water quality standards and/or waste discharge requirements during construction (temporary impacts) and operation (polluted stormwater runoff due to an increase in impervious surfaces). In accordance with the NPDES Stormwater Program, and as described in Section 3.6 - Geology and Soils (of the Draft EIR), Mitigation Measure GEO – 2 ensures the Project will comply with existing regulatory requirements to prepare a SWPPP designed to control erosion and the loss of topsoil to the extent practicable using BMPs that the RWQCB has deemed effective in controlling erosion, sedimentation, runoff during construction activities. The specific controls are subject to the review and approval by the RWQCB and are an existing regulatory requirement. Implementation of Mitigation Measure GEO - 2 would ensure that the proposed Project would have a less than significant impact.

As noted in Section 3.3 – Biological Resources (of the Draft EIR), the Project requires an abandonment and relocation of an irrigation canal. Therefore, Mitigation Measure BIO-7 requires a delineation of the drainage and determination of jurisdiction prior to the issuance of grading permits. If the drainage is jurisdictional, additional permitting with the USACE, RWQCB, and/or CDFW is also required prior to construction activities to maintain adequate water quality standards. With implementation of BIO-7, impacts of the Project to water quality would be less than significant.

In addition, the Project will generate typical wastewater (sewer) associated with residential developments and will connect to the City's sewer system. The Project site would be located within the service area of the City of Lemoore Wastewater Treatment Facility (WWTF). Since the WWTF is considered a publicly owned treatment facility, operational discharge flows treated at the WWTF would be required to comply with applicable water discharge requirements issued by the RWQCB. Compliance with conditions or permit requirements established by the City as well as water discharge requirements outlined by the RWQCB would ensure that wastewater discharges coming from the proposed Project site and treated by the WWTP system would not exceed applicable Central RWQCB wastewater treatment requirements. The Project will not result in a violation of any water quality standards or waste discharge requirements. Therefore, with mitigation, impacts result in a less than significant impact.

**Impact 3.9-2:** After mitigation, the Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin.

**Finding:** Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

**Mitigation Measures:** HYD – 1 and HYD – 2.

**Facts in Support of the Finding:** As described in Section 3.9 – Hydrology and Water Quality (of the Draft EIR), the Project would require 518 acre-feet (AF) (or approximately 169 million gallons (MG)) of water per year from the City's water system on an on-going basis and approximately 83 AF during construction (not on-going). The City can produce up to approximately 6,912 MG per year of potable water. The projected 2040 demand in the City is 4,830 MG, leaving a difference of 2,082 MG. At 169 MG, the Project would account for approximately 8.1% of the projected 2040 demand in the City. Since the City's 2015 UWMP has projected sufficient reasonably available volumes of water and because the Project is within the population growth assumptions (and associated water availability) identified in both the City's 2015 UWMP and 2020 WMP, there is sufficient water to serve the Project on an on-going basis.

The City's General Plan provides policies related to annexation of agricultural properties. Specifically, General Plan Policy PU-I-10 states the following: "Require that developers of agricultural land to be annexed to the City offer the water rights associated with this land to the City." The Project Applicant currently has 100 water shares (equivalent to 150 AFY) that are subject to this Policy. Mitigation Measure HYD – 1 requires evidence that the Kings County Local Agency Formation Commission (LAFCo) has approved the annexation of the project site into the City's boundaries and requires that 100 water shares be offered to the City to comply with Policy PU-I-10. In addition, the Project will be required to pay impact fees associated with connection to the City's water system. This requirement is identified in Mitigation Measure HYD – 2. With implementation of the mitigation measure, the impact is less than significant.

**Impact 3.9-3**: After mitigation, the Project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

- result in substantial erosion or siltation on- or off—site; or
- substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or offsite;
- create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

- impede or redirect flood flows.

**Finding:** Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

**Mitigation Measures:** BIO – 7 and GEO – 2.

**Facts in Support of the Finding:** The site is currently used for agricultural purposes (most recently planted with alfalfa hay). Since the proposed Project would result in new impervious areas associated with site improvements, including new asphalt, concrete, and the proposed structures on site, the existing drainage pattern at the site would be altered. In addition, an unnamed irrigation ditch lies within 50 feet of the southeastern corner of the Project site. The Project will require a 50-foot easement for irrigation water to Lemoore Canal & Irrigation District Company as the above-ground canal along a portion of the western and southern boundary will be abandoned and relocated into an underground pipe through the Project site. The irrigation ditch is distributional from the Lemoore Canal to the east, which distributes water from the Kings River to the north. As noted in previously, the Project will be required to obtain permits in order to relocate the drainage. Mitigation Measure BIO-7 requires a delineation of the drainage and determination of jurisdiction prior to the issuance of grading permits. If the drainage is jurisdictional, additional permitting with the USACE, RWQCB, and/or CDFW is also required prior to construction activities. With implementation of BIO-7, impacts of the Project to water quality would be less than significant.

The Project site is located in "Area Two" as defined by the City's Storm Drainage Master Plan. According to the Plan, the Project is required to construct a detention basin that would discharge on a low-flow basis to the Lemoore Canal. The proposed Project would install storm water drainage facilities (e.g. storm drainage mechanisms and storm water pipes), the final design of which is subject to review and approval by the City of Lemoore. A storm drainage plan has been developed that includes a 4.39-acre drainage basin at the southwest corner of the site. Stormwater will be collected from the Project to this detention basin and then discharged into the City's existing storm system through a pipeline that will be constructed by the Project.

Substantial erosion, siltation or flooding are not expected to occur as the site is developed. In accordance with the NPDES Stormwater Program, and as described in the Section 3.6 - Geology and Soils, the Project will be required to comply with existing regulatory requirements to prepare a SWPPP designed to control erosion and the loss of topsoil to the extent practicable using BMPs that the RWQCB has deemed effective in controlling erosion, sedimentation, runoff during construction activities. The specific controls are subject to the review and approval by the RWQCB and are an existing regulatory requirement. Implementation of Mitigation Measure GEO - 2 would ensure that the proposed Project would have a less than significant impact relative to this topic.

**Impact 3.9-5:** After mitigation, the Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

**Finding:** Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

**Mitigation Measures:** BIO – 7 and GEO – 2.

**Facts in Support of the Finding:** The City of Lemoore is part of the South Fork Kings Groundwater Sustainability Agency (South Fork GSA), which is under the purview of the Tulare Lake Subbasin Groundwater Sustainability Plan. The City of Lemoore, as a member of the South Fork GSA, will work with the GSA to implement the projects and management actions identified by the GSA. Upon Project approval and annexation into the City of Lemoore, the Project will be subject to the requirements of the Sustainability Plan of the South Fork GSA. Thus, the Project will not conflict with the sustainable groundwater management plan. Mitigation Measure MM GEO-2 requires the implementation of a SWPPP, which would include BMPs designed to prevent degrading water quality. Additionally, Mitigation Measure BIO-7 requires the Project to determine if additional permitting with the USACE, RWQCB, and/or CDFW is needed prior to construction activities to maintain adequate water quality standards. With implementation of BIO-7 and GEO-2, impacts of the Project to water quality would be less than significant. Therefore, the Project will not conflict with or obstruct a water quality control plan.

## Noise

**Impact 3.11-1:** After mitigation, the Project will not result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

**Finding:** Implementation of the following mitigation measures will reduce potential impacts to a less than significant level.

**Mitigation Measures:** NOI – 1 and NOI – 2.

**Facts in Support of the Finding:**

Construction Noise

Construction noise would occur at various locations within the project site through the buildout period. Existing sensitive receptors could be located as close as 100 feet from construction activities.

Construction noise is not considered to be a significant impact if construction is limited to the allowed hours and construction equipment is adequately maintained and muffled. Extraordinary noise-producing activities (e.g., pile driving) are not anticipated. The City limits hours of construction to occur only between the hours of 7:00 a.m. to 8:00 p.m., Monday through Saturday. Construction activities outside of these hours, as well as Sundays and holidays, may only be allowed by the review authority through conditions of approval. Construction noise impacts could result in annoyance or sleep disruption for nearby residents if nighttime operations were to occur or if equipment is not properly muffled or maintained.

During the construction of the proposed Project, construction activities have the potential to impact noise sensitive land uses in the immediate vicinity. Mitigation Measure NOI- 1 requires that construction equipment have noise control devices installed, stationary construction equipment, staging and laydown areas are placed to direct noise away from sensitive receptors, and that trucks do not idle more than 5 minutes. NOI-2 requires that signs displaying hours of construction activities and the contact information of a designated noise disturbance coordinator be posted.

Implementation of Mitigation Measures NOI-1 and NOI2 would ensure compliance with the City noise standards. As a result, construction-related noise impacts of the Project are less than significant.

<u>Operational Noise</u>

Project-related increases in traffic noise along the fifteen analyzed noise receptor locations would not result in noise levels exceeding the City's 60 dB Ldn exterior noise level standard or result in an increase of 5 dB at any receptor location. It should be noted, while traffic noise exposure levels at some receptor locations (R-9, R-10 and R-15 shown in the Draft EIR) do exceed the City's 60 dB Ldn exterior noise level standard, this exceedance is not a result of the Project, and is therefore not considered to be a significant impact. Additionally, many receptors have existing sound walls (including R-9, R-10 and R-15 shown in the Draft EIR) which would result in noise levels lower than what would occur with no sound walls.

Table 3.11-6 of the Draft EIR also indicates that Project-related increases in traffic noise at nearby sensitive receptor locations would generally increase by less than 1 dB for Cumulative 2040 traffic conditions. Project-related increases in traffic noise at receptor locations located along Lacey Boulevard, east of the future alignment of Mary Drive) would be approximately 1 dB for Cumulative 2040 traffic conditions. Project-related increases in traffic noise at receptor locations along 18th Avenue (Lemoore Street), south of the project site would be approximately 2-3 dB for cumulative 2040 traffic conditions.

Therefore, Project-related increases in traffic noise exposure are considered to be less than significant and no mitigation for operational noise is required.

## Public Services

**Impact 3.15-1**: After mitigation, the Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection, police protection, schools, parks, or other public facilities.

**Finding:** Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

**Mitigation Measures:** PUB – 1, PUB – 2, PUB – 3, and PUB – 4.

**Facts in Support of the Finding:** As with other areas of the City, the Project will require fire and police protection services. The Project will also increase student enrollment in the Lemoore Union High School and Elementary School Districts and will potentially increase the use of public parks. These topics are addressed individually below.

Police Protection

In order to maintain adequate levels of police protection, the Lemoore Police Department will need to increase its resources to serve the Project. Based on the City's ratio of 1.33 police officers per thousand residents, the proposed Project would require an additional 3.4 police officers at full buildout (2,558 residents / 1,000 = 2.558 X 1.33 = 3.4). Response times and the ability of the Police Department to provide acceptable levels of service are contingent on increasing staffing levels, sworn and civilian, consistent with resident population increase and the population of visitors, merchants, schools, and shoppers within the Department's service area.

The proposed Project does not trigger the need for a new police station or expansion of existing facilities at this time. A new police station is not proposed at this time, and the proposed Project would not directly result in the need for the construction of new police facilities; thus, the Project will have a less than significant impact relative to construction of new police protection facilities.

The proposed Project will be required to pay police service impact fees from new development based on projected impacts from the development. This fee will be determined by the City and the City's Police Department. Payment of the applicable impact fees by the Project applicant, and ongoing revenues that would come from property taxes, sales taxes, and other revenues generated by the

Project, would fund capital and labor costs associated with police protection services. Implementation of Mitigation Measure PUB-2 would reduce impacts on police protection services to a less-than-significant level. Given the temporary nature of the Project's construction phases, impacts to police services during construction would be less than significant.

Fire Protection

In order to maintain adequate levels of fire protection, the Lemoore Volunteer Fire Department will need to increase its resources to serve the Project. Based on the City's ration of 1.5 firefighters per thousand residents, the proposed Project would require an additional 3.8 firefighters at full buildout (2,558 residents / 1,000 = 2.558 X 1.5 = 3.8). The City's General Plan requires the expansion of fire service to meet identified response times. The City has a number of General Plan policies which assist in the establishment of fire protection. Specifically, SN-I-27, requires the Fire Department performance and response standards at Class 3 ISO rating or better, and the construction of a new fire station in West Lemoore. The proposed Project does not trigger the need for a new fire station or expansion of existing facilities at this time. A new fire station is not proposed at this time, and the proposed Project would not directly result in the need for the construction of new fire facilities; thus, the Project will have a less than significant impact relative to construction of new fire protection facilities

The Project will comply with City building standards and local and State standards for fire-related components such as adequate emergency access, location of fire hydrants, adequate defensible space around the site, use of fire-retardant materials, etc. In addition, the proposed Project will be required to pay fire service impact fees from new development based on projected impacts from the development. This fee will be determined by the City. Payment of the applicable impact fees by the Project applicant, and ongoing revenues that would come from property taxes, sales taxes, and other revenues generated by the Project, would fund capital and labor costs associated with fire protection services. Implementation of Mitigation Measure PUB-1 would reduce impacts on fire protection services to a less-than-significant level. Given the temporary nature of the Project's construction phases, impacts to fire protection services during construction would be less than significant.

Schools

Funding for schools and school facilities impacts is outlined in Education Code Section 17620 and Government Code Section 65995 et. seq., which governs the amount of fees that can be levied against new development. These fees are used to construct new or expanded school facilities. Payment of fees authorized by the statute is deemed "full and complete mitigation."

The proposed Project will be required to pay impact fees from new development based on the Developer Fee rates that are in place at the time payment is due. The payment amount is determined by the School District and the State Allocation Board who sets the maximum per-square-foot Level 1

school impact fees every two (even) years at its January meeting. Payment of the applicable impact fees by the Project applicant would fund capital and labor costs associated with providing school services to the Project. The Project will be required to pay the school impact fee as a condition of approval. Implementation of Mitigation Measure PUB-3 would reduce impacts on schools and educational services to a less-than-significant level.

Parks

The proposed Project includes the construction of three parks for a total of 7.46 acres and 1.64 acres of trails for a total of 9.1 acres as identified in Figure 2-4 of Chapter Two – *Project Description*. Based on the City's requirement of five acres per thousand residents, the Project not meet the City's requirement for parkland acreage by 3.69 acres. Therefore, the Project developer will also be required to pay in lieu fees, in compliance with the goals, policies, and implementation measures of the General Plan and Lemoore City Municipal Code Title 9, Chapter 7, Article N. Implementation of Mitigation Measure PUB-4 would reduce impacts on parks and recreational services to a less-than-significant level.

Other Public Facilities

Development of the Project will increase the demand for other public services such as libraries, governmental services, emergency services and health services. However, the relatively small increase in demand will not in and of itself require construction of additional facilities. As described in Section 3.12 – Population and Housing (of the Draft EIR), the anticipated population and housing unit increase associated with the proposed Project is within the growth projections of the City's 2030 General Plan. Based on the City's General Plan and infrastructure master planning documents, it is determined that the proposed Project will not induce unplanned population growth beyond that which can be accommodated by these other public services.

Therefore, with implementation of Mitigation Measures PUB-1 through PUB-4, the proposed Project will have a less than significant impact on public services.

## Recreation

**(Initial Study) Impact 3.16-a**: After mitigation, the Project would not increase the use of exiting neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated nor does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

**Finding:** Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

**Mitigation Measures:** PUB – 4.

**Facts in Support of the Finding:** The proposed Project includes the construction of three parks for a total of 7.46 acres and 1.64 acres of trails for a total of 9.1 acres as identified in Figure 2-4 of Chapter Two – *Project Description*. Based on the City's requirement of five acres per thousand residents, the Project would be short of the City's requirement for parkland acreage by 3.69 acres. Therefore, the Project developer will also be required to pay in lieu fees, in compliance with the goals, policies, and implementation measures of the General Plan and Lemoore City Municipal Code Title 9, Chapter 7, Article N. Implementation of Mitigation Measure PUB-4 would reduce impacts on parks and recreational services to a less-than-significant level.

## Transportation

**Impact 3.14-1:** After mitigation, the Project would not conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.

**Finding:** Implementation of the following mitigation measures will reduce potential impacts to a less than significant level.

**Mitigation Measures:** TRA – 1 and TRA – 2.

**Facts in Support of the Finding:** At full buildout, the proposed Project is estimated to generate a maximum of 7,362 daily trips, 554 AM peak hour trips and 730 PM peak hour trips. All roadway segments and intersections are anticipated to operate at acceptable levels of service (LOS). The only exception is the intersection of Liberty Drive and Hanford-Armona Road which is projected to operate at an unacceptable LOS during both the AM and PM peak periods. To improve the LOS at this intersection, it is recommended that the following improvement be implemented:

- Liberty Drive / Hanford-Armona Road
  - Signalize the intersection with protected left-turn phasing in all directions while retaining the existing lane geometrics.

Mitigation measure TRA-1 will require the developer to pay a per rata share for the improvement needed at the intersection of Liberty Drive and Hanford-Armona Road. With implementation of TRA-1, the level of service and traffic flow in the Project area will remain acceptable and impacts would be less than significant.

Because traffic volumes on many of the roadways are minimal, utilization of traffic control signs acceptable to the City are recommended to identify locations where construction workers or construction-related trucks and heavy equipment would turn onto and off local roadways to access the project site. Mitigation Measure TRA-2 would require that all oversize vehicles used on public roadways during construction obtain required permits and obtain approval of a Construction Traffic Control Plan, as well as identify anticipated construction delivery times and vehicle travel routes in advance to minimize construction traffic during a.m. and p.m. peak hours. This would ensure that construction-related oversize vehicle loads are in compliance with applicable California Vehicle Code sections and California Street and Highway Codes applicable to licensing, size, weight, load, and roadway encroachment of construction vehicles. Implementation of TRA-2 would reduce temporary construction related traffic impacts to less than significant levels.

**Impact 3.14-4:** After mitigation, the Project would not result in inadequate emergency access.

**Finding:** Implementation of the following mitigation measures will reduce potential impacts to a less than significant level.

**Mitigation Measures:** TRA – 2.

**Facts in Support of the Finding:** Preparation of a detailed Traffic Management Plan (TMP) as required by TRA-2, would be required prior to construction of the proposed Project. The TMP would delineate all road closures provisions to maintain access to adjacent residential properties at all times, prior notices, adequate sign-postings, detours, provisions for pedestrian and bicycle transportation and permitted hours of construction activity. Proper detours and warning signs would be established along the project perimeter to ensure public safety. The TMP shall be devised so that construction would not interfere with emergency response or evacuation plans. With implementation of the TMP and mitigation measures, less than significant impacts are anticipated. Therefore, no significant impacts to vehicular and emergency access would occur during construction activities.

Once constructed the proposed Project includes multiple access roads allowing adequate egress and ingress to the residential development in the event of an emergency. Additionally, as part of the proposed Project, internal access roadways would be constructed to City standards. The City has reviewed the site layout and determined that the Project provides adequate emergency access. Therefore, after mitigation, there is a less than significant impact.

## Tribal Cultural Resources

**Impact 3.15-1**: After mitigation, the Project would not cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

**Finding:** Implementation of the following mitigation measures will reduce potential impacts to a less than significant level.

**Mitigation Measures:** TRI – 1, TRI – 2, TRI – 3, and TRI – 4.

**Facts in Support of the Finding:** the City of Lemoore conducted their required tribal outreach related to the proposed Project in March of 2020. According to AB 52, the tribes had 90 days from the receipt of the letter to request consultation with the City of Lemoore. Of the tribes that were notified, the City received one response from the Santa Rosa Rancheria Tachi Yokut Tribe, who requested that a Tribal representative be retained to provide a cultural presentation to all construction staff and the landowner within 20 days prior to the start of initial ground-breaking.

As previously discussed in Chapter 3.4 – Cultural Resources (of the Draft EIR), the subject site is not known to contain any tribal cultural resources (TCRs). As further noted in that chapter, with respect to archaeological resources and human remains that may be present in areas where there would be some ground disturbance, mitigation measures set forth in the section would be implemented to ensure that should resources be encountered, they would be protected from damage. Therefore, while no TCRs are expected to be affected by the proposed Project, the mitigation measures set forth in Chapter 3.4 - Cultural Resources as well as TRI – 1 through TRI – 4 would further ensure that any resources encountered would not be adversely affected.

Although construction and operation would occur on previously disturbed land, unknown historical resources may be discovered during ground-disturbing activities. In order to account for unanticipated discoveries and the potential to impact previously undocumented or unknown resources, the following mitigation measures are recommended. With the implementation of Mitigation Measures TRI-1 through TRI-4, impacts under this criterion would be less than significant with mitigation.

Based on the above, the proposed Project is not expected to result in a substantial adverse change in the significance of TCRs, and this impact is considered less than significant with mitigation.

## Utilities and Service Systems

**Impact 3.16-1:** The Project will require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities. However, after mitigation, the Project will not result in significant environmental impacts resulting from the construction or relocation of these facilities.

**Finding:** Implementation of the following mitigation measures will reduce potential impacts to a less than significant level.

**Mitigation Measures:** HYD – 1, HYD – 2, and UTIL – 1.

**Facts in Support of the Finding:** The Project will require that utilities be extended to serve the proposed development, including water, wastewater, stormwater, electric power, natural gas and telecommunications facilities. Extension of utilities will be the responsibility of the Project Developer. The Project will be subject to water and sewer modeling to determine any needed improvements to or additions to the City's existing infrastructure. The improvements required to tie into existing utilities are included in the Project Description, the environmental impacts of extending these utilities are analyzed within this EIR under the various CEQA Appendix G topics. Numerous mitigation measures have been included throughout this document which are applicable to these activities. In addition, the Project will be subject to various development impact fees as determined by the City in order to construct any necessary on- or off-site improvements required in order to provide adequate utilities.

Mitigation Measure HYD – 1 requires evidence that the Kings County Local Agency Formation Commission (LAFCo) has approved the annexation of the project site into the City's boundaries and requires that 100 water shares be offered to the City to comply with Policy PU-I-10. In addition, the Project will be required to pay impact fees associated with connection to the City's water system. This requirement is identified in Mitigation Measure HYD – 2. The Project would be required to pay

wastewater (sewer) impact fees prior to the issuance of a building permit, thereby mitigating the costs associated with acceptance of the Project wastewater (Mitigation Measure UTIL-1), and ensuring the impact remains less than significant.

Thus, with incorporation of mitigation measures the proposed Project's impacts associated with acquisition of utilities would be less than significant.

**Impact 3.16-2:** After mitigation, the Project would have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years.

**Finding:** Implementation of the following mitigation measures will reduce potential impacts to a less than significant level.

**Mitigation Measures:** HYD – 1 and HYD – 2.

**Facts in Support of the Finding:** As described in Section 3.16 – Utilities and Service Systems (of the Draft EIR), the Project would require 518 acre-feet (AF) (or approximately 169 million gallons (MG)) of water per year from the City's water system on an on-going basis and approximately 83 AF during construction (not on-going). The City can produce up to approximately 6,912 MG per year of potable water. The projected 2040 demand in the City is 4,830 MG, leaving a difference of 2,082 MG. At 169 MG, the Project would account for approximately 8.1% of the projected 2040 demand in the City. Since the City's 2015 UWMP has projected sufficient reasonably available volumes of water and because the Project is within the population growth assumptions (and associated water availability) identified in both the City's 2015 UWMP and 2020 WMP, there is sufficient water to serve the Project on an on-going basis.

The City's General Plan provides policies related to annexation of agricultural properties. Specifically, General Plan Policy PU-I-10 states the following: "Require that developers of agricultural land to be annexed to the City offer the water rights associated with this land to the City." The Project Applicant currently has 100 water shares (equivalent to 150 AFY) that are subject to this Policy. Mitigation Measure HYD – 1 requires evidence that the Kings County Local Agency Formation Commission (LAFCo) has approved the annexation of the project site into the City's boundaries and requires that 100 water shares be offered to the City to comply with Policy PU-I-10. In addition, the Project will be required to pay impact fees associated with connection to the City's water system. This requirement is identified in Mitigation Measure HYD – 2. With implementation of the mitigation measure, the impact is less than significant.

**Impact 3.16-3:** After mitigation, the Project would result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments.

**Finding:** Implementation of the following mitigation measure will reduce potential impacts to a less than significant level.

**Mitigation Measures:** UTIL – 1.

**Facts in Support of the Finding:** The Project would generate wastewater with similar characteristics to discharge produced by other uses in the City, including similar in content to the residential land uses in the immediate area (typical residential wastewater from toilets, sinks, showers, etc.). There are no non-residential uses that would introduce atypical wastewater characteristics. Wastewater generated by the Project would be collected and treated at the City's WWTF. Because of the nature of the Project's wastewater, and the fact that the WWTF is currently in compliance with their Waste Discharge Requirements, the Project will not cause the City to exceed any wastewater treatment requirements from the RWQCB.

The City's Wastewater Master Plan anticipated a population of up to 32,416 people by 2040. Given the City's current population as identified in the Wastewater Master Plan (27,089 persons), the City could accommodate the proposed Project plus an additional 2,769 persons according to the underlying assumptions of the City's Wastewater Master Plan. The proposed Project would result in the development of up to 825 residential units. The City averages 3.1 persons per household, which could result in an increase of approximately 2,558 people at full Project buildout. Based on this information, it is reasonable to assume that the Project is within the population growth projections (and associated wastewater capacity availability) identified in the City's Wastewater Master Plan. Although the City's WWTF has adequate capacity to serve the Project, improvements to the City's existing wastewater system will be required in order to maintain adequate wastewater disposal services. The Project would be required to pay wastewater (sewer) impact fees prior to the issuance of a building permit, thereby mitigating the costs associated with acceptance of the Project wastewater (Mitigation Measure UTIL-1), and ensuring the impact remains less than significant.

## 5.5 Environmental Impacts Not Fully Mitigated to a Less Than Significant Level

The City Council finds, based on substantial evidence in the record including the EIR and as noted below, the following environmental impacts identified in the EIR remain significant even after application of all feasible mitigation measures, as set forth below. The City also finds that any alternative discussed in the EIR that may reduce the significance of these impacts is rejected as

infeasible for the reasons given in the EIR and this Section of these Findings. In accordance with CEQA Guidelines Section 1092(b)(2), the City Council of the City of Lemoore cannot approve the Project unless if first finds (1) under Public Resources Code Section 21081(a)(3), and CEQA Guidelines Section 15091(a)(3), that specific economic, legal, social, technological, or other considerations, including provisions of employment opportunities make infeasible the mitigation measures or project alternatives identified in the EIR; and (2) under CEQA Guidelines Section 15092(b), that the remaining significant affects are acceptable due to overriding concerns described in the CEQA Guidelines Section 15093 and, therefore, a statement of overriding considerations is included herein. Each potential unavoidable significant impact is overridden as set forth below in the Statement of Overriding Considerations as described further in Section 5.8, and the City finds that specific overriding economic, legal, social, technological, or other benefits of the Project outweigh the significant effects on the environment.

## Agriculture and Forestry Resources

**Impact 3.1-1:** The Project would convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.

**Finding:** There are no mitigation measures available that would reduce the impact resulting from loss of farmland on the Project site.

**Mitigation Measures:** None.

**Facts in Support of the Findings:** According to the FMMP, the 155-acre proposed Project site is classified as approximately 154 acres of Prime Farmland and one acre of Unique Farmland. The site is partially designated by the City of Lemoore General Plan for future residential uses and is currently zoned as Limited Agricultural-10 District (AL-10) by Kings County. Approximately one-third of the site (the southerly one-third) is within the City's Sphere of Influence (SOI) while the remaining northern two-thirds are currently outside the SOI and outside the City's Planning Boundary. As the northern two thirds of the proposed Project site was not included in the Planning Area of the 2030 Lemoore General Plan, this same area of the site was not included in the agricultural conversion analysis of the 2030 Lemoore General Plan EIR. Conversion of the Project site to urban uses will result in a significant and unavoidable impact from loss of prime and unique farmland.

The City has considered mitigation through agricultural easements for the proposed Project. However, in a recent Court of Appeals decision, *King & Gardiner Farms v. County of Kern* (2020) 45 Cal. App. 5th 814, the Court found that a mitigation measure that requires a conservation easement over

off-site farmland would not provide adequate mitigation for the loss of farmland that would result from the project. In the Court's findings, it was determined that conservation easements do not compensate for the impact of converting farmland to non-farmland use because the mitigation would not create new farmland that would offset the loss of converted farmland.

Under CEQA, mitigation measures are deemed effective if they will substantially lessen or minimize an environmental impact. In this case, since an agricultural conservation easement or payment of in-lieu fees wouldn't reduce the impacts associated with loss of farmland on the proposed Project site, an agricultural conservation easement or payment of in-lieu fees would not be considered "effective" mitigation.

In addition, neither the City nor the County of Kings have a farmland mitigation or agricultural conservation easement program in which the proposed Project can participate. Absent such a City-wide or regional program, the City cannot impose mitigation in the form of agricultural easements or payment of in-lieu fees on a case-by-case basis. Thus, the City's finding is that the loss of farmland associated with the proposed Project will be a significant and unavoidable impact under CEQA and a Statement of Overriding Considerations will be prepared for consideration by the City as Lead Agency.

In addition, in Draft EIR Chapter 3.10 Hydrology (of the Draft EIR) it was noted General Plan Policy PU-I-10 states the following: "Require that developers of agricultural land to be annexed to the City offer the water rights associated with this land to the City." The City imposed Mitigation Measure MM HYD-1 that requires evidence that that 100 water shares be offered to the City to comply with Policy PU-I-10. This mitigation would also help mitigate for the loss of agricultural lands within the City by a City farmland related program.

All feasible mitigation measures have been included in the Project's Draft EIR and will also be enforced as conditions of approval through the provisions of CEQA. However, the impact remains significant and unavoidable.

**Impact 3.3-1 (Cumulative Level):** The Project would convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.

**Finding:** There are no mitigation measures available that would reduce the impact resulting from loss of farmland on the Project site.

**Mitigation Measures:** None.

**Facts in Support of the Findings:** The geographic area of the cumulative analysis related to agricultural lands is the entire State of California. As discussed above, the Project includes the significant impact related to the conversion of protected farmland to urban uses in addition to amending the existing SOI to include additional agricultural acreage. Amending the SOI will eventually lead to urban development and thereby contribute to the loss of viable agricultural land in the region. As such, when combined with other projects in the State that result in the removal of prime or protected agricultural lands, the Project would have a significant and unavoidable and cumulatively considerable impact on agricultural resources and a Statement of Overriding Considerations will be prepared for consideration by the City as Lead Agency.

## Biological Resources

**Impact 3.3-1 (Cumulative Level):** The Project would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service.

**Finding:** Implementation of the following mitigation measure will reduce potential impacts, but not to a less than significant level at the cumulative level.

**Mitigation Measures:** BIO – 1, BIO – 2, BIO – 3, BIO – 4, BIO – 5 and BIO – 6.

**Facts in Support of the Findings:** Cumulative impacts for a project would be significant if the incremental effects of the individual project are considerable when combined with the effects of past projects, other current projects, and probable future projects. As described herein, the Project impacts would be less than significant with implementation of Mitigation Measures BIO-1 through BIO-7 at the project level.

The geographic area for considering cumulative impacts to biological resources is the western portion of the San Joaquin Valley. Development in Kings County and the San Joaquin Valley has resulted in a decline of many plant and animal species. Implementation of the Project in addition to the other projects underway or proposed within Lemoore and Kings County would impact transient wildlife species, including burrowing owls, Swainson's hawk, other raptors, and San Joaquin kit foxes. The Project site contains habitat that support insects, rodents and small birds that provide a prey base for raptors and terrestrial wildlife. In addition, based on the literature review and database search completed for the project, the region is known to support a diversity of special-status species, some of which are expected to utilize the Project site on a transient basis, if at all. Additionally, the Project will

eliminate 156 acres of cropland that is utilized by Swainson's hawk as foraging habitat. Although the Project will provide mitigation to reduce impacts to Swainson's hawk with implementation of BIO-1 through BIO-3 and mitigation measures BIO – 4 through BIO – 6 for other species, the proposed Project, in combination with all identified cumulative projects, could result in a cumulatively considerable contribution to a significant cumulative impact.

Given the number of present, and reasonably foreseeable future development projects in the western San Joaquin valley, the Project, when combined with these projects, would result in a significant and unavoidable cumulative loss of foraging habitat for special-status species. Cumulative impacts are significant and unavoidable even with implementation of mitigation.

## Hydrology and Water Quality

**Impact 3.9-2 (Cumulative Level):** After mitigation, the Project would substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin.

**Finding:** Implementation of the following mitigation measure will reduce potential impacts, but not to a less than significant level at the cumulative level.

**Mitigation Measures:** HYD – 1 and HYD – 2.

**Facts in Support of the Findings:** The geographic area for cumulative hydrology analysis is the land area included in the Tulare Lake Sub Basin. Buildout of the City's General Plan and other pending projects in the Basin area will contribute to an increase in groundwater demand.

As described in Section 3.9 – Hydrology and Water Quality (of the Draft EIR), the Project would require 518 acre-feet (AF) (or approximately 169 million gallons (MG)) of water per year from the City's water system on an on-going basis and approximately 83 AF during construction (not on-going). The City can produce up to approximately 6,912 MG per year of potable water. The projected 2040 demand in the City is 4,830 MG, leaving a difference of 2,082 MG. At 169 MG, the Project would account for approximately 8.1% of the projected 2040 demand in the City. Since the City's 2015 UWMP has projected sufficient reasonably available volumes of water and because the Project is within the population growth assumptions (and associated water availability) identified in both the City's 2015 UWMP and 2020 WMP, there is sufficient water to serve the Project on an on-going basis.

However, development of the Project in combination with future projects within the Basin would increase the amount of overdraft in the Basin. The City of Lemoore is part of the South Fork GSA,

which is under the purview of the Tulare Lake Subbasin Groundwater Sustainability Plan. According to the Sustainability Plan, several projects and management actions were chosen for the South Fork GSA as identified herein. As the City of Lemoore will provide water to the proposed Project (upon approval), the Project will be subject to the requirements of the GSA. The projects identified by the South Fork GSA are intended to achieve groundwater balance.

Mitigation Measure HYD – 1 requires evidence that the Kings LAFCo approved the annexation of the Project site into the City's boundaries and requires that 100 water shares be offered to the City to comply with Policy PU-I-10. HYD-2 requires the payment of water service impact fees to reduce Project impacts to the City's water system. However, despite the implementation of mitigation, the proposed Project's water use, in combination with other cumulative scenario projects requiring water from the Tulare Lake Subbasin (Groundwater Basin No. 5-022.12) during the same time frame, would result in cumulatively considerable and unavoidable significant impacts to groundwater supplies in the Basin.

## Transportation

**Impact 3.14-2:** After mitigation, the Project would conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).

**Finding:** Implementation of the following mitigation measure will reduce potential impacts, but not to a less than significant level at the cumulative level.

**Mitigation Measures:** TRA – 3, TRA – 4, and TRA – 5.

**Facts in Support of the Findings:** The Project's trip generation, number of residential units, and square footages of non-residential uses were provided to Kings County Association of Governments (KCAG) in order to conduct a Project-specific Vehicle Miles Traveled (VMT) analysis using the KCAG model for specific Project components. Based on KCAG VMT results, Project components containing residential land uses are projected to yield an average VMT per capita of 9.29, which exceeds the VMT threshold for residential uses of 8.16 VMT per capita. As a result, it is required that the Project implement VMT mitigation measures TRA – 3, TRA – 4 and TRA – 5 for the residential component to reduce VMT per Capita. VMT mitigation measures and internal capture are projected to reduce the residential VMT per capita from 9.29 to 8.61. This reduction does not reduce the Project's VMTs to below the threshold of 8.16 VMT per capita.

Therefore, even after implementation of feasible VMT mitigation measures TRA-3 through TRA-5, which requires the construction of bike lanes and traffic calming features, the Project exceeds the threshold of 8.16 VMT per capita and is determined to be significant and unavoidable.

**Impact 3.14-2 (Cumulative level):** After mitigation, the Project would conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b) at the cumulative level.

**Finding:** Implementation of the following mitigation measure will reduce potential impacts, but not to a less than significant level at the cumulative level.

**Mitigation Measures:** TRA – 3, TRA – 4, and TRA – 5.

**Facts in Support of the Findings:** The Project's trip generation, number of residential units, and square footages of non-residential uses were provided to Kings County Association of Governments (KCAG) in order to conduct a Project-specific Vehicle Miles Traveled (VMT) analysis using the KCAG model for specific Project components. Based on KCAG VMT results, Project components containing residential land uses are projected to yield an average VMT per capita of 9.29, which exceeds the VMT threshold for residential uses of 8.16 VMT per capita. As a result, it is required that the Project implement VMT mitigation measures TRA – 3, TRA – 4 and TRA – 5 for the residential component to reduce VMT per Capita. VMT mitigation measures and internal capture are projected to reduce the residential VMT per capita from 9.29 to 8.61. This reduction does not reduce the Project's VMTs to below the threshold of 8.16 VMT per capita.

Construction of the individual development projects allowed under the land use designations of the City General Plan may result in the generation of traffic increases and may contribute incrementally to Citywide VMTs. While all feasible and reasonable mitigation has been imposed on the Project, VMTs remains above the City's threshold and therefore is a cumulatively considerable impact. Mitigation measures TRA – 3 through TRA – 5 will require the developer to install bicycle lanes, bicycle parking, and traffic calming features. VMT mitigation measures and internal capture are projected to reduce the residential VMT per capita from 9.29 to 8.61. This reduction does not reduce the Project's VMTs to below the threshold of 8.16 VMT per capita. Therefore, after mitigation, this impact is cumulatively considerable.

## Utilities and Service Systems

**Impact 3.16-2 (Cumulative level):** After mitigation, the Project would not, at the cumulative level, have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years.

**Finding:** Implementation of the following mitigation measures will reduce potential impacts, but not to a less than significant level.

**Mitigation Measures:** HYD – 1 and HYD – 2.

**Facts in Support of the Finding:** The geographic area for cumulative hydrology analysis is the land area included in the Tulare Lake Sub Basin. Buildout of the City's General Plan and other pending projects in the Basin area will contribute to an increase in groundwater demand. As described in Section 3.16 – Utilities and Service Systems (of the Draft EIR), the Project would require 518 acre-feet (AF) (or approximately 169 million gallons (MG)) of water per year from the City's water system on an on-going basis and approximately 83 AF during construction (not on-going). The City can produce up to approximately 6,912 MG per year of potable water. The projected 2040 demand in the City is 4,830 MG, leaving a difference of 2,082 MG. At 169 MG, the Project would account for approximately 8.1% of the projected 2040 demand in the City. Since the City's 2015 UWMP has projected sufficient reasonably available volumes of water and because the Project is within the population growth assumptions (and associated water availability) identified in both the City's 2015 UWMP and 2020 WMP, there is sufficient water to serve the Project on an on-going basis at the project level.

However, development of the Project in combination with future projects within the Basin would increase the amount of overdraft in the Basin. The City of Lemoore is part of the South Fork GSA, which is under the purview of the Tulare Lake Subbasin Groundwater Sustainability Plan. According to the Sustainability Plan, several projects and management actions were chosen for the South Fork GSA as identified herein. As the City of Lemoore will provide water to the proposed Project (upon approval), the Project will be subject to the requirements of the GSA. The projects identified by the South Fork GSA are intended to achieve groundwater balance.

Mitigation Measure HYD – 1 requires evidence that the Kings LAFCo approved the annexation of the Project site into the City's boundaries and requires that 100 water shares be offered to the City to comply with Policy PU-I-10. HYD-2 requires the payment of water service impact fees to reduce Project impacts to the City's water system. However, despite the implementation of mitigation, the proposed Project's water use, in combination with other cumulative scenario projects requiring water from the Tulare Lake Subbasin (Groundwater Basin No. 5-022.12) during the same time frame, would

result in cumulatively considerable and unavoidable significant impacts to groundwater supplies in the Basin.

## 5.6 Alternatives

CEQA Guidelines Section 15126.6 requires the consideration of a range of reasonable alternatives to the proposed Project that could feasibly attain most of the objectives of the proposed Project. The alternatives analyzed for the Project are as follows:

1. No Project
2. Alternate Location
3. Reduced (50%) Project

These alternatives are described in more detail below.

### 1. No Project Alternative

CEQA Section 15126.6(e) requires the discussion of the No Project Alternative "to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project." The No Project scenario in this case consists of retaining the property in its original configuration, with no construction or operation of the proposed Lacey Ranch residential development. Under this alternative, the site remains in agricultural production and no new urban development would occur on the site.

*Description*

This alternative would avoid both the adverse and beneficial effects of the Project. This alternative would avoid ground disturbance and construction-related impacts associated with construction of the proposed Project. No new development would occur on the site. The No Project Alternative would avoid the generation of any environmental impacts beyond existing conditions.

*Environmental Considerations*

Continuation of the site as an agricultural facility would result in all environmental impacts being less than the proposed Project, as no new impacts would occur. There would be no changes to any of the existing conditions and there would be no impact to each of the 20 CEQA Checklist evaluation topics. The No-Project Alternative by definition would not meet the objectives of the proposed Project.

### 2. Alternate Location Alternative

*Description*

There are relatively few sites within the City of Lemoore that provide adequately sized lands suitable for the proposed Project. The criteria for selection included whether or not the alternate site would substantially reduce environmental impacts, availability of land, adequately sized parcels, efficiency of access, and acceptable land use designations/zoning. There are areas of agricultural land of similar size located both east and west of the proposed Project. These areas could conceivably support the proposed Project and are depicted in the Figure A-1 of the Draft EIR. The areas considered for this Alternative were similar sized parcels located immediately west or east of the proposed Project site. The areas are outside the City limits but have similar zoning and land use designations as the proposed Project site. In addition, these areas would allow for contiguous growth adjacent to existing urban development in the City.

*Environmental Considerations*

Most of the environmental issues associated with this alternative would be similar to those of the proposed Project. The potential impacts from this alternative are summarized as follows:

- **Aesthetics** – With development of a similar project on an alternate site, aesthetic impacts would occur through the conversion of farmland to urban uses, introduction of light/glare, and construction of residential units on vacant land. Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project.
- **Agriculture and Forestry Resources** - With development of a similar project on an alternate site, agricultural impacts would occur through the conversion of farmland to urban uses. Therefore, impacts are similar to the proposed Project. This Alternative would not eliminate the significant and unavoidable impacts (project and cumulative) associated with this topic from the proposed Project.
- **Air Quality** - With development of a similar project on an alternate site, air quality impacts would occur from construction activities (construction vehicles and equipment, dust and other emissions) and from operational activities (vehicle trip emissions and other emissions from the development). Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project.
- **Biological Resources** - With development of a similar project on an alternate site, biological impacts could occur from development of a previously agricultural site to urban uses. Therefore, impacts are similar to the proposed Project. This Alternative would not eliminate the significant and unavoidable impacts (cumulative only) associated with this topic from the proposed Project.

- **Cultural Resources** - With development of a similar project on an alternate site, cultural resource impacts could occur from development of a previously agricultural site to urban uses. Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project.
- **Energy** - With development of a similar project on an alternate site, energy impacts would occur from construction activities (electricity, fuel) and operational activities (electricity, natural gas, fuel). Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project.
- **Geology/Soils** - With development of a similar project on an alternate site, impacts to geology and soils would occur from construction activities (grading and land disturbing activities) and operational activities (the Alternative project would be subject to geotechnical evaluation). Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project.
- **Greenhouse Gas Emissions** - With development of a similar project on an alternate site, greenhouse gas emission impacts would occur from construction activities (construction equipment emissions and vehicle emissions) and operational activities (vehicle emissions). Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project.
- **Hazards & Hazardous Materials** - With development of a similar project on an alternate site, hazardous impacts would occur from construction activities (use and storage of hazardous substances) and operational activities (use and storage of hazardous substances). The Alternative site would also be a similar distance from the Lemoore Naval Air Station and would have similar impacts as the proposed Project. Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project.
- **Hydrology & Water Quality** - With development of a similar project on an alternate site, hydrology and water quality impacts would occur from construction activities (water for dust control, requirement for preparation of a SWPPP, drainage control) and operational activities (water demand associated with the development, drainage control). Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project. This Alternative would not eliminate the significant and unavoidable impacts (cumulative only) associated with this topic from the proposed Project.
- **Land Use / Planning** - With development of a similar project on an alternate site, land use and planning impacts would occur from development of existing agricultural lands to urban uses. The Alternative would not divide an established community. Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project.
- **Mineral Resources** - With development of a similar project on an alternate site, mineral resource impacts could occur from construction activities (grading and ground-disturbing

activities) and operational activities (conversion of land to urban uses). Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project.

- **Noise** - With development of a similar project on an alternate site, noise impacts would occur from construction activities (construction equipment and vehicles) and operational activities (vehicles, air conditioners, televisions, radios, lawn mowers, etc.). The Alternative locations are similarly proximate to existing urban uses (as compared to the proposed Project). Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project.
- **Population & Housing** - With development of a similar project on an alternate site, population and housing impacts would occur from development of these sites. Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project.
- **Public Services** - With development of a similar project on an alternate site, public service impacts would occur from development of these sites (need for police, fire, schools and other public facilities). Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project.
- **Recreation** - With development of a similar project on an alternate site, recreation impacts would occur from development of these sites (the City requires 5 acres of parkland per 1,000 residents). Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project.
- **Transportation** - With development of a similar project on an alternate site, transportation impacts would occur from construction (vehicles and equipment, which would require a Traffic Control Plan) and operation (vehicles associated with the residential development). Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project. This Alternative would not eliminate the significant and unavoidable impacts (VMT impacts at the project and cumulative level) associated with this topic from the proposed Project.
- **Tribal Cultural Resources** - With development of a similar project on an alternate site, tribal cultural resource impacts could occur from development of these sites (conversion of agricultural lands to urban uses). Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project.
- **Utilities & Service Systems** - With development of a similar project on an alternate site, utility and service system impacts would occur from construction activities (water for dust control, solid waste disposal) and operational activities (water demand associated with the development, wastewater disposal, solid waste disposal). Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed

Project. This Alternative would not eliminate the significant and unavoidable impacts (cumulative only for water supply) associated with this topic from the proposed Project.

- **Wildfire** - With development of a similar project on an alternate site, wildfire impacts could occur from development of these sites (conversion of agricultural lands to urban uses). Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project.

### 3. Reduced Project (50%) Alternative

This alternative would keep the same acreage, but would reduce the number of units from 825 to 412. All other project components, including overall acreage would remain (parks, etc.). This would result in larger lot sizes as compared to the proposed Project.

*Environmental Considerations*

Most of the environmental issues associated with this alternative would be less than those of the proposed Project. The potential impacts from this alternative are summarized as follows:

- **Aesthetics** – With development of the Project site with 50% of the residential units (as compared to the proposed Project), aesthetic impacts would occur through the conversion of farmland to urban uses, introduction of light/glare, and construction of residential units on non-urbanized land. Since this Alternative would be on the same site as the Project, impacts are determined to be similar to the proposed Project.
- **Agriculture and Forestry Resources** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), agricultural impacts would occur through the conversion of farmland to urban uses. Therefore, impacts are similar to the proposed Project. This Alternative would not eliminate the significant and unavoidable impacts (project and cumulative) associated with this topic from the proposed Project.
- **Air Quality** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), air quality impacts would occur from construction activities (construction vehicles and equipment, dust and other emissions) and from operational activities (vehicle trip emissions and other emissions from the development). According to the Project's Air Quality / Greenhouse Gas / Energy Study prepared for the Project, the proposed Project will have annual air pollutant emission rates that are less than the applicable San Joaquin Valley Air Pollution Control District thresholds of significance. Even though the proposed Project is below existing thresholds of significance, this alternative would have lower annual emission rates than the proposed project for the following criteria pollutants: CO, NOx, VOC, SOx, PM10 and PM2.5. Air pollutant emission rates associated

with this alternative are thus lower than the proposed project due to the reduced number of residential units (and associated reduction in vehicle trips).

- **Biological Resources** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), biological impacts could occur from development of a previously agricultural site to urban uses. Since this Alternative would be on the same site as the Project, impacts are determined to be similar to the proposed Project. This Alternative would not eliminate the significant and unavoidable impacts (cumulative only) associated with this topic from the proposed Project.
- **Cultural Resources** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), cultural resource impacts could occur from development of a previously agricultural site to urban uses. Since this Alternative would be on the same site as the Project, impacts are determined to be similar to the proposed Project.
- **Energy** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), energy impacts would occur from construction activities (electricity, fuel) and operational activities (electricity, natural gas, fuel). However, since this Alternative would have 50% less residential units as compared to the proposed Project, energy impacts would be less than the proposed Project.
- **Geology/Soils** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), impacts to geology and soils would occur from construction activities (grading and land disturbing activities) and operational activities (the Alternative project would be subject to geotechnical evaluation). Since this Alternative would be on the same site as the Project, impacts are determined to be similar to the proposed Project.
- **Greenhouse Gas Emissions** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), greenhouse gas emission impacts would occur from construction activities (construction equipment emissions and vehicle emissions) and operational activities (vehicle emissions). However, since this Alternative would have 50% less residential units as compared to the proposed Project, greenhouse gas emissions would be less than the proposed Project.
- **Hazards & Hazardous Materials** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), hazardous impacts would occur from construction activities (use and storage of hazardous substances) and operational activities (use and storage of hazardous substances). Since this Alternative would be on the same site as the Project, impacts are determined to be similar to the proposed Project.
- **Hydrology & Water Quality** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), hydrology and water quality impacts would occur from construction activities (water for dust control, requirement for preparation of a SWPPP, drainage control) and operational activities (water demand associated with the development, drainage control). However, since this Alternative would have 50% less

residential units as compared to the proposed Project, hydrology and water quality impacts would be less than the proposed Project. This Alternative would not eliminate the significant and unavoidable impacts (cumulative only) associated with water supply from the proposed Project.

- **Land Use / Planning** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), land use and planning impacts would occur from development of existing agricultural lands to urban uses. The Alternative would not divide an established community. Since this Alternative would be on the same site as the Project, impacts are determined to be similar to the proposed Project.
- **Mineral Resources** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), mineral resource impacts could occur from construction activities (grading and ground-disturbing activities) and operational activities (conversion of land to urban uses). Since this Alternative would be on the same site as the Project, impacts are determined to be similar to the proposed Project.
- **Noise** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), noise impacts would occur from construction activities (construction equipment and vehicles) and operational activities (vehicles, air conditioners, televisions, radios, lawn mowers, etc.). However, since this Alternative would have 50% less residential units as compared to the proposed Project, noise impacts would be less than the proposed Project.
- **Population & Housing** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), population and housing impacts would occur from development of these sites. However, since this Alternative would have 50% less residential units as compared to the proposed Project, population and housing impacts would be less than the proposed Project.
- **Public Services** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), public service impacts would occur from development of these sites (need for police, fire, schools and other public facilities). However, since this Alternative would have 50% less residential units as compared to the proposed Project, public service impacts would be less than the proposed Project.
- **Recreation** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), recreation impacts would occur from development of the site (the City requires 5 acres of parkland per 1,000 residents). However, since this Alternative would have 50% less residential units as compared to the proposed Project, recreation impacts would be less than the proposed Project.
- **Transportation** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), transportation impacts would occur from construction (vehicles and equipment, which would require a Traffic Control Plan) and operation (vehicles

associated with the residential development). However, since this Alternative would have 50% less residential units as compared to the proposed Project, transportation impacts would be less than the proposed Project. This Alternative would not eliminate the significant and unavoidable impacts (VMT impacts at the project and cumulative level) associated with this topic from the proposed Project.

- **Tribal Cultural Resources** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), tribal cultural resource impacts could occur from development of these sites (conversion of agricultural lands to urban uses). Since this Alternative would be on the same site as the Project, impacts are determined to be similar to the proposed Project.
- **Utilities & Service Systems** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), utility and service system impacts would occur from construction activities (water for dust control, solid waste disposal) and operational activities (water demand associated with the development, wastewater disposal, solid waste disposal). However, since this Alternative would have 50% less residential units as compared to the proposed Project, utility and service system impacts would be less than the proposed Project. This Alternative would not eliminate the significant and unavoidable impacts (cumulative only for water supply) associated with this topic from the proposed Project.
- **Wildfire** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), wildfire impacts could occur from development of these sites (conversion of agricultural lands to urban uses). Since this Alternative would be on the same site as the Project, impacts are determined to be similar to the proposed Project.

<u>Environmentally Superior Alternative</u>

As presented in the comparative analysis above, there are a number of factors in selecting the environmentally superior alternative. An EIR must identify the environmentally superior alternative to the project. The No Project Alternative would be environmentally superior to the Project on the basis of its minimization or avoidance of physical environmental impacts. However, CEQA Guidelines Section 15126.6(e)(2) states:

> *The "no project" analysis shall discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.*

Because the No Project Alternative cannot be the Environmentally Superior Alternative under CEQA, the Reduced (50%) Project Alternative would be the Environmentally Superior alternative because it would result in less adverse physical impacts to the environment with regard to air, water, noise, public services, population/housing, utilities and traffic. However, the Reduced (50%) Project Alternative does not eliminate the proposed Project's significant and unavoidable impacts associated with Agriculture - Loss of Farmland (project and cumulative), Biological resources (cumulative only), Hydrology – Water Supply (cumulative only), or Transportation (Vehicle Miles Traveled impacts) (project and cumulative). Furthermore, the Reduced (50%) Project Alternative does not meet all of the Project objectives, particularly with regard diversity of housing.

**Summary and Determination**

Only the No Project and Reduced Project Alternatives could potentially result in fewer impacts than the proposed Project's impacts. These Alternatives however, would not meet the objectives of the proposed Project. After this full, substantial, and deliberate analysis, the proposed Project remains the preferred alternative.

## 5.7 Growth Inducing Impacts

Section 15126.2(d) of the CEQA Guidelines requires than at EIR evaluate the growth-inducing impacts of a proposed action. A growth-inducing impacts is defined by the CEQA Guidelines as:

> *The way in which a proposed project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth… it is not assumed that growth in an area is necessarily beneficial, detrimental, or of little significance to the environment.*

Based on the State CEQA Guidelines, growth inducement is any growth that exceeds planned growth of an area and results in new development that would not have taken place without implementation of the Project. A project can have direct and/or indirect growth inducement potential. Direct growth inducement would result if a project, for example, involved construction of new housing. A project would have indirect growth inducement potential if it established substantial new permanent employment opportunities or if it would involve a construction effort with substantial short-term employment opportunities that would indirectly stimulate the need for additional housing and services to support the new employment demand. Similarly, a project would indirectly induce growth if it would remove an obstacle to additional growth and development, such as removing a constraint on a required public service. A project providing an increased water supply in an area where water service historically limited growth could be considered growth-inducing.

The State Guidelines further explain that the environmental effects of induced growth are considered indirect impacts of the proposed action. These indirect impacts or secondary effects of growth include increased demand on other community and public services and infrastructure, increased traffic and noise, and adverse environmental impacts such as degradation of air and water quality, degradation or loss of plant and animal habitat, and conversion of agricultural and open space land to developed uses.

Growth inducement may constitute an adverse impact if the growth is not consistent with or accommodated by the land use plans and growth management plans and policies for the area affected. Local land use plans provide for land use development patterns and growth policies that allow for the orderly expansion of urban development supported by adequate urban public services, such as water supply, roadway infrastructure, sewer service, and solid waste service.

The proposed Project is the establishment of a residential development that is being proposed in response to the demand for housing in the area. The Project is consistent with the City of Lemoore's General Plan and Zoning Ordinance and will connect to all existing City utility services. The anticipated population and housing unit increase associated with the proposed Project are within the growth projections of the City's 2030 General Plan. The proposed Project would create a relatively minor amount of new (temporary) employment opportunities during construction; however, those positions would likely be readily filled by the existing employment base. There are no other aspects of the Project (such as creation of oversized utility lines, etc.) that would induce further growth in the area. The proposed Project would not result in significant growth-inducing impacts.

## 5.8 Statement of Overriding Considerations

Public Resources Code Section 21081 mandates that no public agency shall approve or carry out a project for which an environmental impact report has been certified that identifies one or more significant effects on the environment that would occur if the Project is approved or carried out unless the following occur:

- The public agency makes one or more of the following findings with respect to each significant impact:
  - Changes or alternatives have been required in, or incorporated into, the Project that mitigate or avoid the significant impacts on the environment.
  - Those changes or alternatives are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency.
  - Specific economic, legal, social, technological, or other considerations make infeasible the mitigation measures or alternatives identified in the EIR.

- With respect to the third point, the public agency finds that specific overriding economic, legal, social and technological, or other benefits of the Project outweigh the significant impact on the environment.

As discussed in Subsection 5.4, significant impacts were identified, but mitigation measures have been incorporated into the Project that mitigate or avoid the significant impacts on the environment. Additionally, as discussed in Subsection 5.5, there were significant and unavoidable impacts that could not be mitigated to a less than significant level.

Accordingly, the Lemoore City Council adopts this Statement of Overriding Considerations with respect to the significant unavoidable impacts associated with adoption of the Project as addressed in the EIR, specifically for the following impact areas:

## Agriculture and Forestry Resources

**Impact 3.1-1:** The Project would convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.

**Impact 3.3-1 (Cumulative Level):** The Project would convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use at the cumulative level.

## Biological Resources

**Impact 3.3-1 (Cumulative Level):** After mitigation, the Project would have a substantial adverse effect at the cumulative level, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service.

## Hydrology and Water Quality

**Impact 3.9-2 (Cumulative Level):** After mitigation, the Project would substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management at the cumulative level.

## Transportation

**Impact 3.14-2:** After mitigation, the Project would conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b). This impact is related to vehicle miles traveled (VMT).

## Utilities and Service Systems

**Impact 3.16-2 (Cumulative level):** After mitigation, the Project would not, at the cumulative level, have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years.

The City Council hereby declares that, pursuant to State CEQA Guidelines Section 15093, the City Council has balanced the benefits of the Project against any significant and unavoidable environmental impacts in determining whether to approve the Project. If the benefits of the Project outweigh the unavoidable adverse environmental impacts, those impacts are considered "acceptable."

The City Council hereby declares that the EIR has identified and discussed significant effects that may occur as a result of the Project. With the implementation of the mitigation measures discussed in the EIR, these impacts can be mitigated to a level of less than significant except for the unavoidable and significant impacts discussed in Subsection 5.5, herein.

The City Council hereby declares that it has made a reasonable and good faith effort to eliminate or substantially mitigate the potential impacts resulting from the Project.

The City Council hereby declares that to the extent any mitigation measures recommended to the City are not to be incorporated, such mitigation measures are infeasible because they would impose restrictions on the Project that would prohibit the realization of specific economic, social, and other benefits that this City Council finds outweigh the unmitigated impacts.

The City Council further finds that except for the Project, all other alternatives set forth in the EIR are infeasible because they may not substantially reduce environmental impacts associated with the Project, and would prohibit the realization of the Project objectives and/or specific economic, social, or other benefits that this City Council finds outweigh any environmental benefits of the alternatives.

The City Council hereby declares that, having reduced the adverse significant environmental effects of the Project, to the extent feasible by adopting the proposed mitigation measures, having considered

the entire administrative record on the Project and having weighted the benefits of the Project against its unavoidable significant impact after mitigation, the City Council has determined that the social, economic, and environmental benefits of the Project outweigh the potential unavoidable significant impacts and render those potential significant impacts acceptable based on the following considerations:

- The Project reflects the stated vision, goals and objectives of the City of Lemoore.
- The Project will ensure orderly development patterns to accommodate projected increases in population through buildout of the General Plan by providing strategic land use designations that avoid or minimize land use conflicts.
- The Project will provide a variety of housing opportunities with a range of densities, styles, sizes and values that will be designed to satisfy existing and future demand for quality housing in the area.
- The Project will maximize and broaden the City's sales tax base by providing local and regional tax-generating uses.
- The Project will improve and maximize economic viability of the Project site and area by providing strategic land use designations.
- The Project will provide a residential development that assists the City in meetings its General Plan and Housing Element requirements and objectives.

As the CEQA Lead Agency for the proposed action, the City of Lemoore has carefully reviewed the Project and the alternatives presented in the EIR, and fully understands the Project and Project alternatives proposed for development. Further, this City Council finds that all potential adverse environmental impacts and all feasible mitigation measures to reduce the impacts from the Project have been identified in the Draft EIR, the Final EIR and public testimony. This City Council also finds that a reasonable range of alternatives was considered in the EIR and this document, Section 5.6, above, and finds that approval of the Project is appropriate.

In Section 5.8, the City Council has identified economic and social benefits and important policy objectives that will result from implementing the Project. The City Council has balanced these substantial social and economic benefits against the unavoidable significant adverse effects of the Project. Given the substantial social and economic benefits that will accrue from the Project, this City Council finds that these specific overriding benefits of the Project outweigh the significant impact on the environment.

Public Resource Code 21002 provides, "In the event specific economic, social and other conditions make infeasible such Project alternatives or such mitigation measures, individual projects can be approved in spite of one or more significant effects thereof." Section 21002(c) provides, "In the event that economic, social, or other conditions make it infeasible to mitigate one or more significant effects

of a project on the environment, the project may nonetheless be approved or carried out at the discretion of a public agency".

Finally, California Administrative Code, Title 4, 15093(a) states, "If the benefits of a Project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered 'acceptable.'"

The City Council hereby declares that the foregoing benefits provided to the public through approval and implementation of the Project outweigh the identified significant adverse environmental impacts of the Project that cannot be mitigated. The City Council finds that each of the Project benefits outweighs the unavoidable adverse environmental impacts identified in the EIR, and finds those impacts to be acceptable.

# 6.0 Certification of the Final Environmental Impact Report

## 6.1 Findings

The City Council finds that it has reviewed and considered the EIR in evaluating the Project, that the EIR is an accurate and objective statement that fully complies with CEQA and the State CEQA Guidelines, and that the EIR reflects the independent judgment of the City Council. The City Council declares that no new significant information as defined by State CEQA Guidelines Section 15088.5 has been received by the City Council after the circulation of the Draft EIR that would require recirculation. All of the information added to the Final EIR merely clarifies, amplifies, or makes insignificant modifications to an already adequate Draft EIR pursuant to State CEQA Guidelines Section 15088.5(b). The City Council hereby certifies the EIR based on the following findings and conclusions.

**CEQA Compliance**

As the decision-making body for the Project, the City Council has reviewed and considered the information contained in the Findings and supporting documentation. The City Council determines that the Findings contain a complete and accurate reporting of the environmental impacts and mitigation measures associated with the Project, as well as complete and accurate reporting of the unavoidable impacts and benefits of the Project as detailed in the Statement of Overriding Considerations. The City Council finds that the EIR was prepared in compliance with CEQA and that the City Council complied with CEQA's procedural and substantive requirements.

**Significant Unavoidable Impacts / Statement of Overriding Considerations**

The Project will have significant adverse impacts even following adoption of all feasible mitigation measures which are required by the City Council. As set forth in Section 5.5 of these Findings, the significant environmental impacts have been identified in the Final EIR and no feasible mitigation measures are available to reduce these impacts to a level of insignificance. The City Council has eliminated or substantially reduced environmental impacts where feasible as described in the Findings, and the City Council determines that the remaining unavoidable significant adverse impacts are acceptable due to the reasons set forth in the preceding Statement of Overriding Considerations.

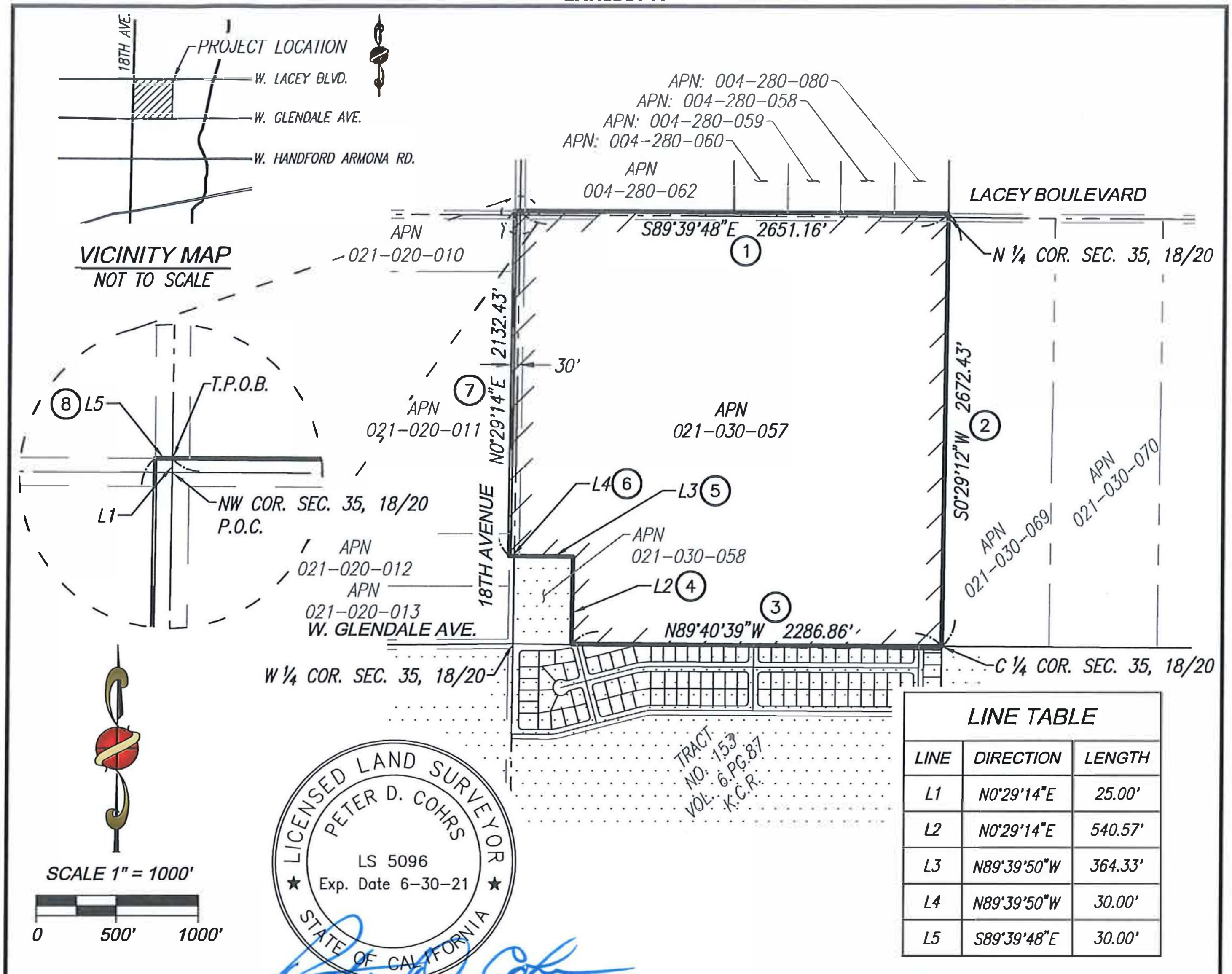
**Conclusions**

All potentially significant environmental impacts from implementation of the Project have been identified in the Final EIR and, with the implementation of the mitigation measures defined herein and set forth in the MMRP, will be mitigated to a less than significant level, except for the impacts identified in Section 5.5, above. Other reasonable alternatives to the Project that could feasibly achieve the basic objectives of the Project have been considered and rejected in favor of the Project. Environmental, economic, social, and other considerations and benefits derived from the development of the Project override and make infeasible any alternatives to the Project or further mitigation measures beyond those incorporated into the Project.

## 7.0 Adoption of Mitigation Monitoring and Reporting Program

Pursuant to Public Resources Code Section 21081.6, the City Council hereby adopts, as conditions of approval of the Project, the MMRP. In the event of any inconsistencies between the mitigation measures as set forth herein and the MMRP, the MMRP shall control except to the extent that a mitigation measure contained herein is inadvertently omitted from the MMRP, in which case such mitigation measure shall be deemed as if it were included in the MMRP.

## EXHIBIT A




| LINE TABLE | | |
|---|---|---|
| LINE | DIRECTION | LENGTH |
| L1 | N0°29'14"E | 25.00' |
| L2 | N0°29'14"E | 540.57' |
| L3 | N89°39'50"W | 364.33' |
| L4 | N89°39'50"W | 30.00' |
| L5 | S89°39'48"E | 30.00' |

### LEGEND

T.P.O.B. — TRUE POINT OF BEGINNING

P.O.C. — POINT OF COMMENCEMENT

(hatched box) — AREA TO BE DETACHED FROM THE COUNTY OF KINGS FIRE PROTECTION DISTRICT AND ANNEXED TO THE CITY OF LEMOORE
AREA: 160 ACRES, MORE OR LESS

(dotted box) — EXISTING CITY OF LEMOORE LIMITS

(#) — COURSE NUMBER IN LEGAL DESCRIPTION

— — — PARCEL LINE

—·—·— SECTION LINE

### PREPARED FOR

ASSEMI GROUP
1396 W. HERNDON AVE., SUITE 103
FRESNO, CA 93711

### PREPARED BY

PRECISION CIVIL ENGINEERING, INC.
1234 "O" STREET
FRESNO, CA 93721
PH: (559) 449-4500
FAX: (559) 449-4515

DATE: 12/31/19 REVISED: - -

RES. NO. ____________ ADOPTED ____________

# LACEY BOULEVARD - 18TH AVENUE SOUTHEAST REORGANIZATION

PORTION OF SECTIONS 26, 27, 34, 35, T. 18 S., R. 20 E., M.D.B.M.
TO BE ANNEXED TO THE CITY OF LEMOORE AND DETACHED FROM THE COUNTY OF KINGS FIRE PROTECTION DISTRICT

FILE NO. ____________

ANNEX NO. ____________

ACRES ____________

COUNCIL DISTRICT NO. ____________

ALLOCATED TO COUNCIL DISTRICT NO. ____________ AS PER COUNCIL DISTRICT MAP ____________

P:\CIVIL 3D PROJECTS\2019\19-037\DOCUMENTS\EXHIBITS\19-037 ANNEXATION EXHIBIT.DWG

## ***EXHIBIT B***

### LACEY BOULEVARD – 18^TH^ AVENUE SOUTHEAST REORGANIZATION

### TO BE ANNEXED TO THE CITY OF LEMOORE AND DETACHED FROM THE COUNTY OF KINGS FIRE PROTECTION DISTRICT

That portion of the Southwest quarter of Section 26, the Southeast quarter of Section 27, the Northeast quarter of Section 34 and the Northwest quarter of Section 35, all in Township 18 South, Range 20 East, Mount Diablo Base and Meridian, in the County of Kings, State of California, described as follows:

COMMENCING at the Northwest corner of said Section 35; thence North 00° 29' 14" East, along the northerly prolongation of the West line of the Northwest quarter of said Section 35, a distance of 25.00 feet to the TRUE POINT OF BEGINNING; thence

1) South 89° 39' 48" East, along the north right of way line of Lacey Boulevard, being parallel with and 25.00 north of the North line of the Northwest quarter of said Section 35, a distance of 2651.16 feet to the northerly prolongation of the East line of the Northwest quarter of said Section 35; thence
2) South 00° 29' 12" West, along said East line of said Northwest quarter and its northerly prolongation, a distance of 2672.43 feet to the Center quarter corner of said Section 35, being a point on the existing City of Lemoore Limits Line; thence
3) North 89° 40' 39" West, along the South line of the Northwest quarter of said Section 35, and along the existing City of Lemoore Limits Line, a distance of 2286.86 feet; thence
4) North 00° 29' 14" East, continuing along the existing City of Lemoore Limits Line, being parallel with and 364.33 feet east of the West line of said Northwest quarter, a distance of 540.57 feet; thence
5) North 89° 39' 50" West, continuing along the existing City of Lemoore Limits Line, a distance of 364.33 feet to the West line of said Northwest quarter; thence
6) Leaving the existing City of Lemoore Limits Line, North 89° 39' 50" East, a distance of 30.00 feet; thence
7) North 00° 29' 14" East, along a line that is parallel with and 30.00 feet west of the West line of said Northwest quarter, and its northerly prolongation, a distance of 2132.43 feet to a point on the westerly prolongation of a line the is parallel with and 30.00 feet north of the North line of the Northwest quarter of said Section 35; thence
8) South 89° 39' 48" East, along said parallel line, a distance of 30.00 feet to the TRUE POINT OF BEGINNING.

Contains an area of: 160 Acres, more or less

Date: 12-20-2019 Revised:

LICENSED LAND SURVEYOR
PETER D. COHRS
EXP. DATE
6-30-2021
LS 5096
STATE OF CALIFORNIA

# Parcel Map Check Report

**Client:**
ASSEMI GROUP
1396 W. HERNDON AVENUE, SUITE 103
FRESNO, CA 93711
Date: 12/20/2019 3:00:22 PM

**Prepared by:**
PRECISION CIVIL ENGINEERING, INC.
1234 'O' STREET
FRESNO, CA 93721

---

Parcel Name: Site 1 – 19-037 ANNEXATION EXHIBIT
Description:

North:6,710.740' East:9,446.503'

Segment# 1: Line
Course: S0°29'12"W Length: 2,672.43'
North: 4,038.407' East: 9,423.804'

Segment# 2: Line
Course: N89°40'39"W Length: 2,286.86'
North: 4,051.279' East: 7,136.980'

Segment# 3: Line
Course: N0°29'14"E Length: 540.57'
North: 4,591.829' East: 7,141.577'

Segment# 4: Line
Course: N89°39'50"W Length: 394.33'
North: 4,594.142' East: 6,747.253'

Segment# 5: Line
Course: N0°29'14"E Length: 2,132.43'
North: 6,726.495' East: 6,765.387'

Segment# 6: Line
Course: S89°39'48"E Length: 30.00'
North: 6,726.319' East: 6,795.386'

Segment# 7: Line

Course: S89°39'48"E
Length: 2,651.16'
North: 6,710.741'
East: 9,446.500'

Perimeter: 10,707.78'
Area: 6,952,935.11Sq.Ft.
Error Closure: 0.003
Course: N74°47'38"W
Error North : 0.0007
East: -0.0025

Precision 1: 3,569,260.00

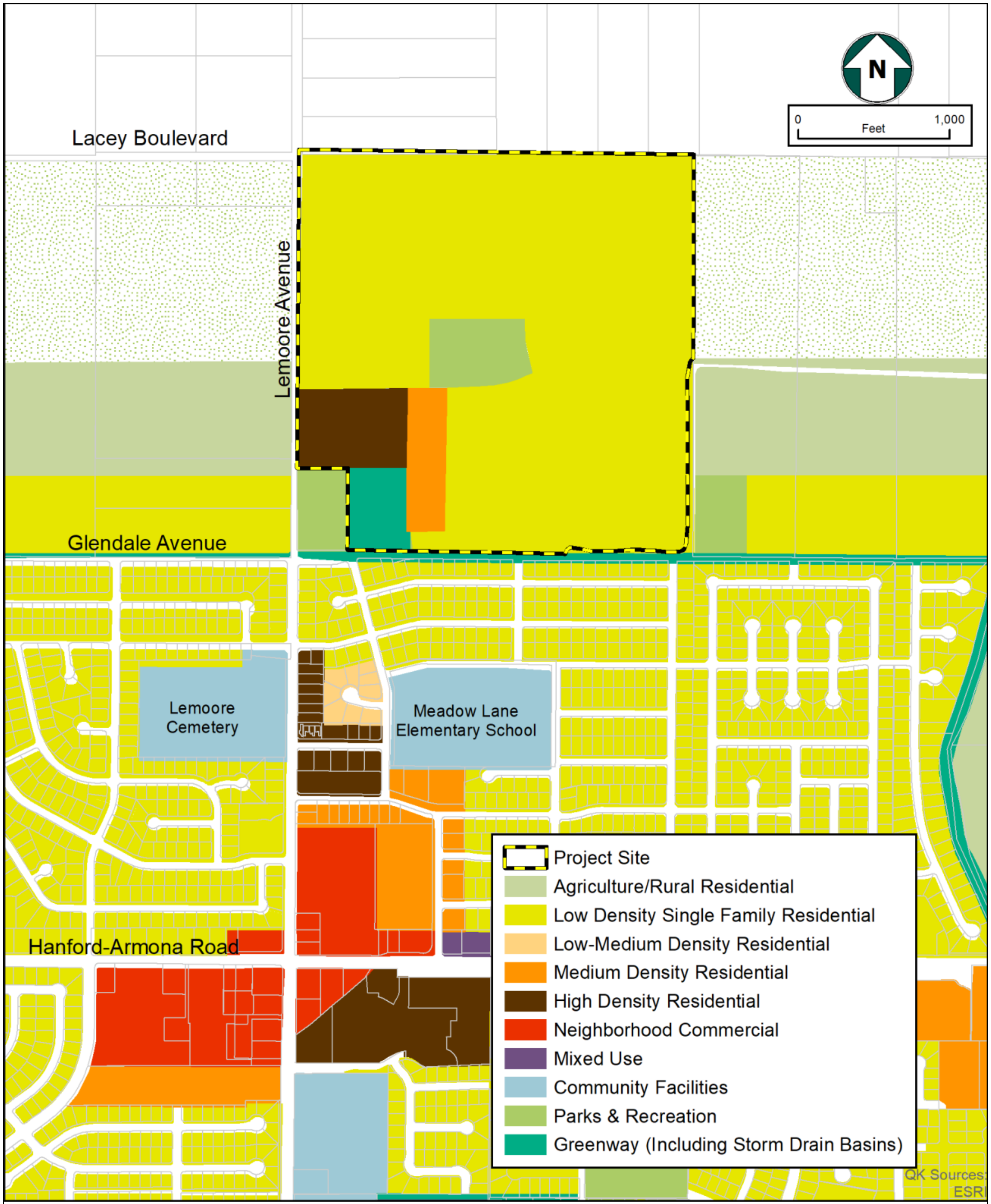



**Exhibit C: General Plan Land Use Designations**

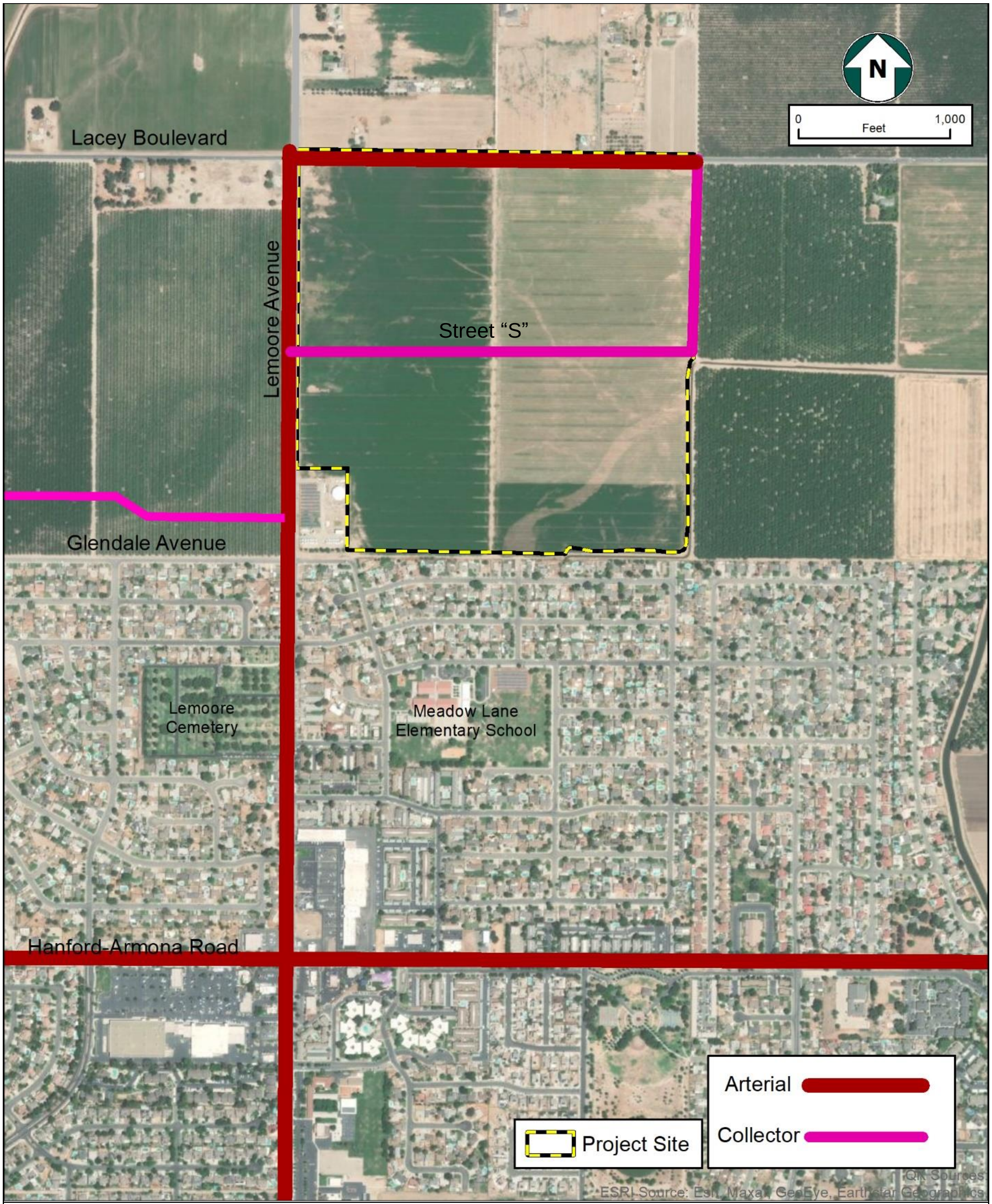



**Exhibit D: General Plan Circulation Map**

**RESOLUTION NO. 2022-19**

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LEMOORE APPROVING TENTATIVE SUBDIVISION MAP TRACT 932 AND MAJOR SITE PLAN REVIEW 2020-03 DEVELOPING 156 ACRES WITH A MIX OF HOUSING TYPES, PARK, TRIAL, AND POND BASIN LOCATED ON THE EAST SIDE OF 18TH AVENUE (LEMOORE AVENUE), SOUTH OF LACEY BOULEVARD AND NORTH OF E. GLENDALE AVENUE JUST OUTSIDE THE LEMOORE CITY LIMITS**

**WHEREAS,** Assemi Group has requested approval of a Tentative Subdivision Map and Major Site Plan Review on 156 acres with 547 single-family lots, two multifamily parcels, parks, trail, and pond basin located on the east side of 18th Avenue (Lemoore Avenue), south of Lacey Boulevard and north of E. Glendale Avenue; and

**WHEREAS,** the site has proposed land use designations of Low Density Residential, Medium Density Residential, High Density Residential, Parks/Recreation, and Greenway/Detention Basin; and

**WHEREAS,** an Environmental Impact Report was prepared in conformance with the California Environmental Quality Act (CEQA) Guidelines, and it was found that the proposed project would have a significant effect on the environment even with mitigations. Therefore, a Statement of Overriding Considerations has been prepared for this project and certified by the City Council; and

**WHEREAS,** the Planning Commission, after holding a public hearing on April 11, 2022, adopted a resolution recommending approval of the project.

**WHEREAS**, the Lemoore City Council held a duly noticed public hearing at its May 3, 2022, meeting.

**NOW THEREFORE, BE IT RESOLVED** that the City Council of the City of Lemoore hereby makes the following findings regarding the proposed project, based on facts detailed in the May 3, 2022, staff report, which is hereby incorporated by reference, as well as the Planning Commission recommendation and the evidence and comments presented during the Public Hearing:

1. The social, economic, and environmental benefits of the Project outweigh the potential unavoidable significant impacts and render those potential significant impacts acceptable based on the following considerations:
    a. The Project reflects the stated vision, goals and objectives of the City of Lemoore.
    b. The Project will ensure orderly development patterns to accommodate projected increases in population through buildout of the General Plan by providing strategic land use designations that avoid or minimize land use conflicts.
    c. The Project will provide a variety of housing opportunities with a range of densities, styles, sizes and values that will be designed to satisfy existing and future demand for quality housing in the area.

d. The Project will maximize and broaden the City's sales tax base by providing local and regional tax-generating uses.

e. The Project will improve and maximize economic viability of the Project site and area by providing strategic land use designations.

f. The Project will provide a residential development that assists the City in meetings its General Plan and Housing Element requirements and objectives.

2. Annexation of the existing site will implement the City's General Plan goals by developing residential uses.

3. The General Plan Amendment is in the public interest, and the General Plan, as amended, will remain internally consistent.

4. The Zoning Map Amendment of the map is consistent with the General Plan goals, policies, and implementation programs

5. The Planned Unit Development (PUD) is compatible and in conformity with public convenience, general welfare, and good land use and zoning practice. The PUD provides for alternative development standards that will increase the density of the site while avoiding negative impacts.

6. The PUD will not be detrimental to the health, safety, and general welfare of the City.

7. The PUD will not adversely affect the orderly development of property or the preservation of property values as the project involves the development of well-designed single-family homes.

8. The Tentative Subdivision Map is consistent with the General Plan and all applicable provisions of the Zoning Code.

9. The proposed project will not be substantially detrimental to adjacent property and will not materially impair the purposes of the Zoning Ordinance or the public interest.

10. As proposed and conditioned herein, the site design of the project is consistent with the new residential development standards in the Zoning Ordinance, as modified by the Planned Unit Development.

11. The proposed project is consistent with the objectives of the General Plan and complies with applicable zoning regulations, including the proposed overlay zone for the Planned Unit Development, specific plan provisions, and improvement standards adopted by the City.

12. The proposed site design and landscape are suitable for the purposes of the building and the site and will enhance the character of the neighborhood and community.

13. The character and scale of the site are compatible with the character of buildings on adjoining and nearby properties.

14. The proposed project will not create conflicts with vehicular, bicycle, or pedestrian transportation modes of circulation.

15. The project's lot sizes are consistent with densities in the General Plan and are appropriate for this site.

**BE IT FURTHER RESOLVED** that the City Council of the City of Lemoore approves Tentative Subdivision Map Tract 932, subject to the following conditions:

1. The site shall be developed consistent with the approved Tentative Map, as modified by the Planned Unit Development, these conditions, and applicable development standards found in the Zoning Ordinance and Lemoore (City) Municipal Code.

2. The site shall be developed consistent with the approved Tentative Map, as modified by the Planned Unit Development, these conditions, and applicable development standards found in the Zoning Ordinance and Lemoore (City) Municipal Code.

3. The site shall be developed consistent with this report and with the Site Plan Review comments.

4. The project shall be developed and maintained in substantial compliance with the Tentative Map, except for any modifications that may be needed to meet these conditions of approval.

5. The final subdivision map shall be submitted in accordance with City ordinances and standards.

6. The 29 residential lots that are proposed along the southern edge of the proposed project, depicted as Lots 93 – 121, shall be restricted to single story homes.

7. The developer shall incorporate the mitigation measures as identified in the Environmental Impact Report into the project, including payment of fair share impact fees for improvements to the Liberty Drive/Hanford-Armona Road intersection.

8. Plans for all public and private improvements, including but not limited to, water, sewer, storm drainage, road pavement, curb and gutter, sidewalk, streetlights, landscaping, and fire hydrants shall be approved by the City Engineer, and these improvements shall be completed in accordance with the approved plans to the satisfaction of the Public Works Department.

9. On-site and off-site traffic and street improvements shall be constructed per the Site Plan Review comments and the mitigation measures in the mitigated negative declaration.

10. Perimeter arterial roadways shall be constructed and widened per City standards and the cross-sections on the Tentative Map as follows:

    - In Phase 1, half of West Lacey Boulevard and 18th Avenue (Lemoore Avenue) will be constructed as arterial streets (adjacent to project site). The road currently "Street S" will be built according to City standards for collector. The (unnamed) future collector running north/south at the western edge of the project will be provided only for In emergency access for fire and emergency vehicles during this phase.

    - Phase 2, the (unnamed) future collector running north/south at the western edge of the project will be built to City standards for collector.

11. Ponding basin and storm drainage improvements shall be constructed per the Major Site Plan Review comments.

12. A landscaped trail along current "Street S" and along current "Street G" between the community park and Trailhead Park shall be constructed prior to the final inspection of the 5th

new home constructed in Phase 1. The acreage of the landscaped area may be counted toward park land dedication requirements in Section 8-7N-4 of the City Municipal Code. The landscaping will include but not be limited to trees, shrubbery, and grass. Signage at the trail ends shall be required.

13. Parks and trails depicted in the proposed plans shall be developed by the developer and then deeded to City. Park land in-lieu fees shall be paid to the City if the acres provided for the park and landscaped trail on the improvement plans are not sufficient, in accordance with the procedures in Section 8-7N-4 of the City Municipal Code. Fees shall be paid prior to approval of the Final Map.

14. A public facilities maintenance district (PFMD) shall be formed in conjunction with the Final Map acceptance in order to provide the maintenance costs for the park, landscape trail, common landscaping, street maintenance, and other improvements in accordance with existing City policy.

15. The project shall be subject to the applicable development impact fees adopted by resolution of the City Council. Per agreement with the developer will pay the water, sewer, and storm drainage impact fees currently under consideration.

16. In conjunction with approval of the Final Map, a noise and odor easement shall be recorded on all lots created, in a form acceptable to the City Attorney, to acknowledge the presence of nearby industry, railroad, and freeways, and the right of the such uses to continue to emit such noise and odors as are otherwise allowable by law and to ensure that such uses in these areas are not unreasonably hindered by residential users and owners that move in or nearby at a later date.

17. In conjunction with approval of the Final Map, an easement shall be recorded on all lots created identifying that the property is near a military installation subject to high aircraft noise, low level aircraft, aircraft tests, and/or other military related issues.

18. The developer shall comply with the standards, provisions, and requirements of the San Joaquin Valley Air Pollution Control District that relate to the project.

19. A minimum six-foot eight-inch-high block wall with decorative columns and caps at least every 100 feet shall be constructed per City standards adjacent to 18th Avenue (Lemoore Avenue) and Lacey Boulevard. Landscaping shall be added to cover at least 50% of the wall within five years of installation.

20. Fire hydrant and connection types and locations shall be approved by the Lemoore Volunteer Fire Department.

21. Concrete pads for installation of mailboxes shall be provided in accordance with determinations made by the Lemoore Postmaster.

22. Street trees from the City approved street tree list shall be planted with root barriers as per Public Works Standards and Specifications.

23. Streetlights shall be provided within the project as per City local streetlight standards.

24. One or more Kings Area Rural Transit (KART) bus stops shall be constructed, if required, at locations directed by KART.

25. The sidewalk type along local streets (parkway type or curb adjacent type) shall be consistent throughout all phases of the subdivision, as per City standard.

26. The sidewalk type along arterial and collector streets shall be parkway type and consistent with City standards.

27. Any existing roadway, sidewalk, or curb and gutter that is damaged during construction shall be repaired or replaced to the satisfaction of the Public Works Department.

28. All signs shall require a sign permit separate from the building permit.

29. Lot sizes less than 7,000 square feet, consistent with the sizes shown on the Tentative Map, shall be adopted per the Planned Unit Development established by the City Council.

30. Article "B" of Chapter 9 of Title 9 of the Lemoore Municipal Code shall be amended as follows to modify lot size and building setbacks:

    Article "B" of Chapter 9 of Title 9 of the Lemoore Municipal Code is amended as follows:

    Table 9-9B-3-1, containing the adopted PUD overlay zones, is hereby amended to add PUD 2020-02:

| **Number** | **Name** | **Date Approved** | **Resolution Number** | **Average Density Per Gross Acre (du/ac)** |
|---|---|---|---|---|
| 2020-02 | Assemi Group, Tract 932 | May 3, 2022 | 2022-19 | 4.81 |

Table 9-9B-4-1, containing specific development standards in the adopted PUD overlay zones, is hereby amended to add PUD 2020-02:

| **Number** | **Name** | **Front Setback** | **Side Setback** | **Rear Setback** |
|---|---|---|---|---|
| 2020-02 | Assemi Group, Tract 932<br><br>*Compact, medium, and estate | 15 feet for compact* and medium* lots (12 feet to covered porch) | 5' interior side<br><br>10' street side | 10 feet for compact* lots<br><br>15 feet for medium* lots |

| | | | | |
|---|---|---|---|---|
| | lots defined on Tract Map | 20 feet for estate* lots (14 feet to covered porch)<br><br>20’ to garage | | 20 feet for estate* lots<br><br>One-story homes only on TSM Lots 93 to 121 |

31. The project and all subsequent uses shall meet the requirements found in Section 9-5B-2 of the Zoning Ordinance related to noise, odor, and vibration, and maintenance.

32. The Tentative Subdivision Map approval shall expire two years from the date of City Council approval, unless a Final Map is filed or an extension is granted via legislation or by the City, in accordance with the Subdivision Map Act. Expiration dates for the Major Site Plan Review and Planned Unit Development shall run consistent with the expiration date of the Tentative Map.

**PASSED AND ADOPTED** at a Meeting of the City Council of the City of Lemoore held on the 3rd day of May 2022 by the following vote:

AYES:

NOES:

ABSTAINING:

ABSENT:

ATTEST:

__________________________
Marisa Avalos
City Clerk

APPROVED:

__________________________
Stuart Lyons
Mayor

**ORDINANCE NO. 2022-05**

**AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF LEMOORE PREZONING TERRITORY LOCATED ON THE EAST SIDE OF 18TH AVENUE (LEMOORE AVENUE), SOUTH OF LACEY BOULEVARD AND NORTH OF E. GLENDALE AVENUE, JUST OUTSIDE THE LEMOORE CITY LIMITS**

**THE CITY COUNCIL OF THE CITY OF LEMOORE HEREBY DOES ORDAIN:**

**SECTION 1.** FINDINGS.

(a) The property owner Assemi Group has requested approval of a Pre-Zoning located on the east side of 18th Avenue (Lemoore Avenue), south of Lacey Boulevard and north of E. Glendale Avenue, just outside City limits (APN: 021-030-057); and

(b) The property owners have consented to annexation.

(c) Government Code Section 56375(a)(7) requires that applications to the Local Agency Formation Commission for annexation include prezoning of the territory proposed for annexation.

(d) This ordinance is consistent with the City of Lemoore General Plan, Lemoore Municipal Code and the Zoning Ordinance and would not be detrimental to the public interest, health, safety, convenience, and welfare of the City.

(e) An Environmental Impact Report has been prepared and adopted in accordance with the California Environmental Quality Act (CEQA).

**SECTION 2.** LOCATION AND PREZONING. The property located on the east side of 18th Avenue (Lemoore Avenue), south of Lacey Boulevard and north of E. Glendale Avenue, just outside City limits (APN: 021-030-057) is hereby prezoned to Low Density Residential (RLD), Medium Density Residential (RMD), High Density Residential (RHD), and Parks/Recreation (PR) as shown in attached Exhibit A.

**SECTION 3.** ZONING MAP. The official Zoning Map shall be amended to reflect this change upon completion of annexation proceedings.

**SECTION 4.** SEVERABILITY.

If any provision of this ordinance is declared unlawful by a court of competent jurisdiction, the City Council intends that the remaining provisions of this ordinance remain in effect.

**SECTION 5.** EFFECTIVE DATE.

The ordinance codified herein shall take effect and be in full force and effect from and after thirty (30) days after its final passage and adoption. Within fifteen (15) days after its adoption, the ordinance codified herein, or a summary of the ordinance codified herein, shall be published once in a newspaper of general circulation.

* * * * * * * * * * * * * * * * * * * * * * * * *

**PASSED AND ADOPTED,** the foregoing Ordinance was introduced at a Regular Meeting of the City Council of the City of Lemoore held on the 3rd day of May 2022, by the following vote:
:

AYES:

NOES:

ABSTAINING:

ABSENT:

| ATTEST: | APPROVED: |
|---|---|
| ______________________ | ______________________ |
| Marisa Avalos<br>City Clerk | Stuart Lyons<br>Mayor |

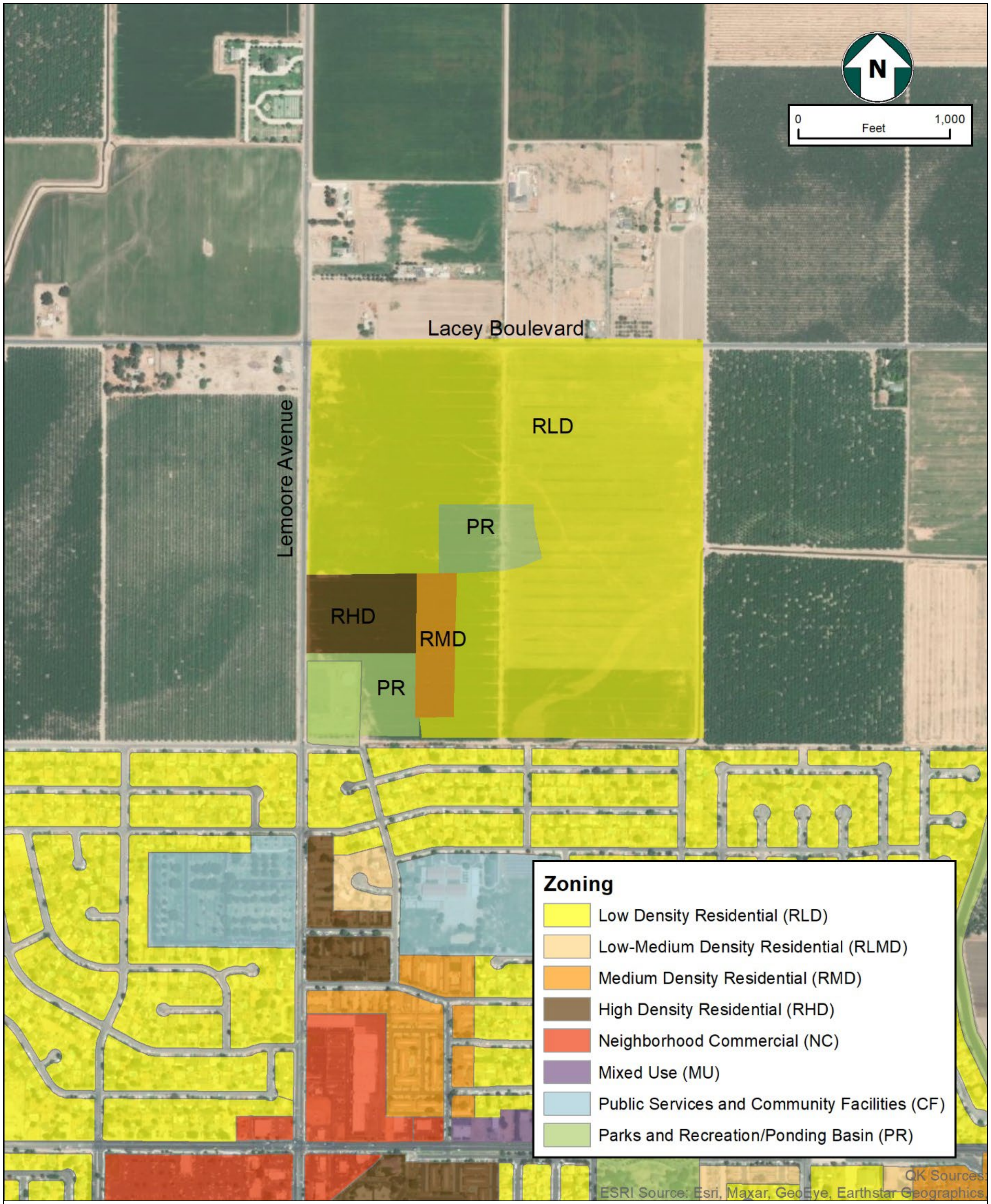



**Exhibit A: Prezoning**

**ORDINANCE NO. 2022-06**

**AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF LEMOORE ADOPTING PLANNED UNIT DEVELOPMENT NO. 2020-02 LOCATED ON THE EAST SIDE OF 18TH AVENUE (LEMOORE AVENUE), SOUTH OF LACEY BOULEVARD AND NORTH OF E. GLENDALE AVENUE**

**THE CITY COUNCIL OF THE CITY OF LEMOORE HEREBY DOES ORDAIN:**

**SECTION 1.** FINDINGS.

(a) The property owner Assemi Group has requested approval of a Planned Unit Development located on the east side of 18th Avenue (Lemoore Avenue), south of Lacey Boulevard and north of E. Glendale Avenue, just outside City limits (APN: 021-030-057).

(b) This Planned Unit Development is consistent with the City of Lemoore General Plan, Lemoore Municipal Code and the Zoning Ordinance and would not be detrimental to the public interest, health, safety, convenience, and welfare of the City.

(c) An Environmental Impact Report has been prepared and adopted in accordance with the California Environmental Quality Act (CEQA).

(d) On April 11, 2022, the Planning Commission for the City of Lemoore recommended approval of the PUD, including specific building setbacks, subject to approval by the City Council of a zoning overlay for the PUD.

**SECTION 2.** PLANNED UNIT DEVELOPMENT ESTABLISHMENT.

A planned unit development is hereby established on property located on the east side of 18th Avenue (Lemoore Avenue), south of Lacey Boulevard and north of E. Glendale Avenue, just outside City limits (APN: 021-030-057). The official Zoning Map shall be amended to reflect this change.

**SECTION 3.** AMENDMENT OF CODE: ADOPTION OF PLANNED UNIT DEVELOPMENT OVERLAY ZONES

Article "B" of Chapter 9 of Title 9 of the Lemoore Municipal Code is amended as follows:

Table 9-9B-3-1, containing the adopted PUD overlay zones, is hereby amended to add PUD 2020-02:

| Number | Name | Date Approved | Resolution Number | Average Density Per Gross Acre (du/ac) |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| 2020-02 | Assemi Group, Tract 932 | May 3, 2022 | 2022-XX [Marisa: tract 932 reso.] | 4.81 |

Table 9-9B-4-1, containing specific development standards in the adopted PUD overlay zones, is hereby amended to add PUD 2020-02:

| Number | Name | Front Setback | Side Setback | Rear Setback |
|---|---|---|---|---|
| 2020-02 | Assemi Group, Tract 932<br><br>* Compact, medium, and estate lots defined on Tract Map | 15 feet for compact* and medium* lots (12 feet to covered porch)<br><br>20 feet for estate* lots (14 feet to covered porch)<br><br>20' to garage | 5' interior side<br><br>10' street side | 10 feet for compact* lots<br><br>15 feet for medium* lots<br><br>20 feet for estate* lots<br><br>One-story homes only on TSM Lots 93 to 121 |

**SECTION 4.** SEVERABILITY.

If any provision of this ordinance is declared unlawful by a court of competent jurisdiction, the City Council intends that the remaining provisions of this ordinance remain in effect.

**SECTION 5.** EFFECTIVE DATE.

The ordinance codified herein shall take effect and be in full force and effect from and after thirty (30) days after its final passage and adoption. Within fifteen (15) days after its adoption, the ordinance codified herein, or a summary of the ordinance codified herein, shall be published once in a newspaper of general circulation.

* * * * * * * * * * * * * * * * * * * * * * * * *

The foregoing Ordinance was introduced at a Regular Meeting of the City Council of the City of Lemoore held on the 3rd day of May 2022, by the following vote:

AYES:

NOES:

ABSTAINING:

ABSENT:

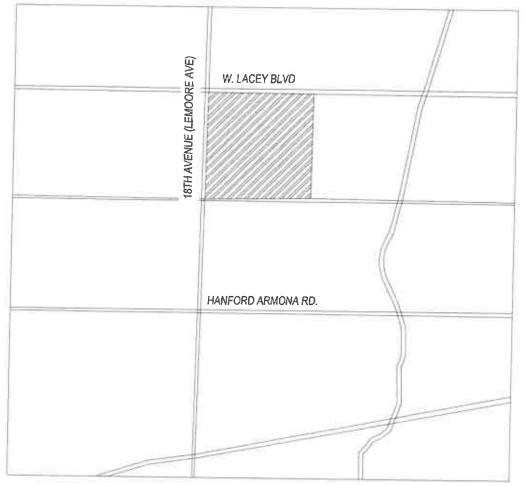
ATTEST: APPROVED:

________________________________
Marisa Avalos, City Clerk

________________________________
Stuart Lyons, Mayor

# TENTATIVE MAP NO. 932

IN THE CITY OF LEMOORE, KINGS COUNTY, STATE OF CALIFORNIA
SURVEYED ON JANUARY 28TH, 2020
BY PRECISION CIVIL ENGINEERING, INC.




## VICINITY MAP

NOT TO SCALE

## LEGAL DESCRIPTION

THE NORTHWEST QUARTER OF SECTION 35, TOWNSHIP 18 SOUTH, RANGE 20 EAST, MOUNT DIABLO BASE AND MERIDIAN, IN THE COUNTY OF KINGS, STATE OF CALIFORNIA, ACCORDING TO GOVERNMENT TOWNSHIP PLAT APPROVED OCTOBER 28, 1869.

EXCEPTING THEREFROM THAT PORTION CONVEYED TO THE CITY OF LEMOORE, A MUNICIPAL CORPORATION AS DESCRIBED IN GRANT DEED RECORDED JANUARY 09, 1998 AS INSTRUMENT NO. 98-420 OF OFFICIAL RECORDS.

APN : 021-030-057-000

AREA : ±156 ACRES (MORE OR LESS)

## LOT COUNT

COMPACT LOTS 52x80 (GREEN) - AVERAGE LOT SIZE = ±4,500 SF = 164 LOTS (30%) (102 NORTH + 62 SOUTH)

MEDIUM LOTS 55x100 (BLUE) - AVERAGE LOT SIZE = ±6,500 SF = 310 LOTS (57%) (155 NORTH + 155 SOUTH)

ESTATE LOTS 70X130 (PINK) - AVERAGE LOT SIZE = ±9,500 SF = 73 LOTS (13%) (73 NORTH + 0 SOUTH)

**TOTAL LOTS = 547 LOTS - AVERAGE LOT SIZE = ±6,800 SF**

**MULTI FAMILY ±204 UNITS = ±27% OF TOTAL UNITS**

## PARK / OPEN SPACE

NUMBER OF PARKS = 4

AREA OF PARKS = 7.90 ACRES

TOTAL TRAIL AREA = 71,609 SQFT OR 1.64 ACRES

TOTAL AREA = 9.54 ACRES

## SITE INFORMATION

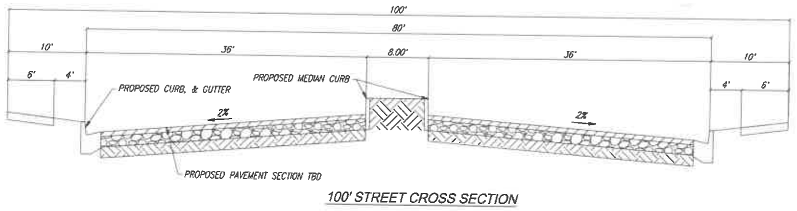
| | |
|---|---|
| GENERAL PLAN LAND USE DESIGNATION: | RESIDENTIAL |
| EXISTING USE:<br>EXISTING ZONING: | AGRICULTURAL<br>PARKS AND RECREATION |
| NUMBER OF LOTS: | 547 |
| AVERAGE LOT AREA: | ±5,940 SQ. FT. |
| DENSITY: | ±4.81 UNITS PER ACRE |
| ASSESSOR'S PARCEL NUMBER: | 021-030-057-000 |
| SITE LOCATION: | SOUTH EAST CORNER OF LACEY BOULEVARD AND 18TH AVENUE (LEMOORE AVENUE) |
| OWNER: | ASSEMI GROUP INC.<br>1396 WEST HERNDON AVE. SUITE 101<br>FRESNO, CA 93711<br>559-445-9000 |

## GENERAL NOTES

1. THERE ARE NO EXISTING STRUCTURES ONSITE, BESIDES THE WELL ALREADY OWNED AND OPERATED BY THE CITY OF LEMOORE.
2. MEDIUM LOW DENSITY RESIDENTIAL, AND OPEN SPACE IS INTENDED FOR THE PROPOSED TENTATIVE MAP.
3. ALL BUILDING SETBACKS SHALL BE IN ACCORDANCE WITH CITY OF LEMOORE ZONING CODES.
4. ALL UTILITY SERVICES ARE PROPOSED TO BE PROVIDED BY THE FOLLOWING AGENCIES:

| | |
|---|---|
| SANITARY SEWER | CITY OF LEMOORE |
| STORM DRAINAGE | CITY OF LEMOORE |
| DOMESTIC WATER | CITY OF LEMOORE |
| FIRE PROTECTION | CITY OF LEMOORE |
| ELECTRICITY | PC&E |
| GAS | PC&E |
| TELEPHONE | AT&T |
| CABLE | COMCAST |
| WASTE DISPOSAL | CITY OF LEMOORE |

5. TRACT MAP PROVIDES FOR BUILDINGS WITH SOUTHERN EXPOSURE FOR NATURAL HEATING DURING THE WINTER MONTHS, WITH AMPLE SPACE FOR DECIDUOUS SHADE TREES FOR NATURAL COOLING DURING THE SUMMER MONTHS.
6. PROPOSED STREET IMPROVEMENTS SHALL BE INSTALLED IN CONFORMANCE WITH CITY OF LEMOORE STANDARDS.
7. ALL PUBLIC UTILITIES (PC&E, TELEPHONE, CABLE, WATER AND SEWER) SHALL BE INSTALLED.
8. ALL IMPROVEMENTS PROPOSED (SEWER, WATER, STORM DRAIN, CURB, GUTTER, STREETLIGHTS, SIDEWALK, AND PERMANENT PAVEMENT) SHALL BE CONSTRUCTED TO CITY STANDARDS.
9. THIS TRACT IS NOT WITHIN 200 FEET OF ANY RAILROAD, FREEWAY OR EXPRESSWAY.




100' STREET CROSS SECTION

NOTES
1. 60' AND 80' TYPICAL STREET SECTIONS PER CITY STANDARDS No. P-14.

SCALE 1" = 150'
0 75' 150' 300'


PLANNING ● SURVEYING ● CIVIL ENGINEERING
1234 O STREET, FRESNO, CALIFORNIA 93721
TEL: 559-449-4500 FAX: 559-449-4515
WWW.PRECISIONENG.NET

PRECISION CIVIL ENGINEERING, INC.


PROJECT TITLE: LACEY RANCH AREA MASTER PLAN
SHEET DESCRIPTION: TENTATIVE MAP
CITY OF: LEMOORE
COUNTY OF: KINGS

PREPARED FOR:
ASSEMI GROUP, INC.
1396 WEST HERNDON AVE. SUITE 101
FRESNO, CA 93711
559-445-9000

REVISIONS
LC 4-08-2020

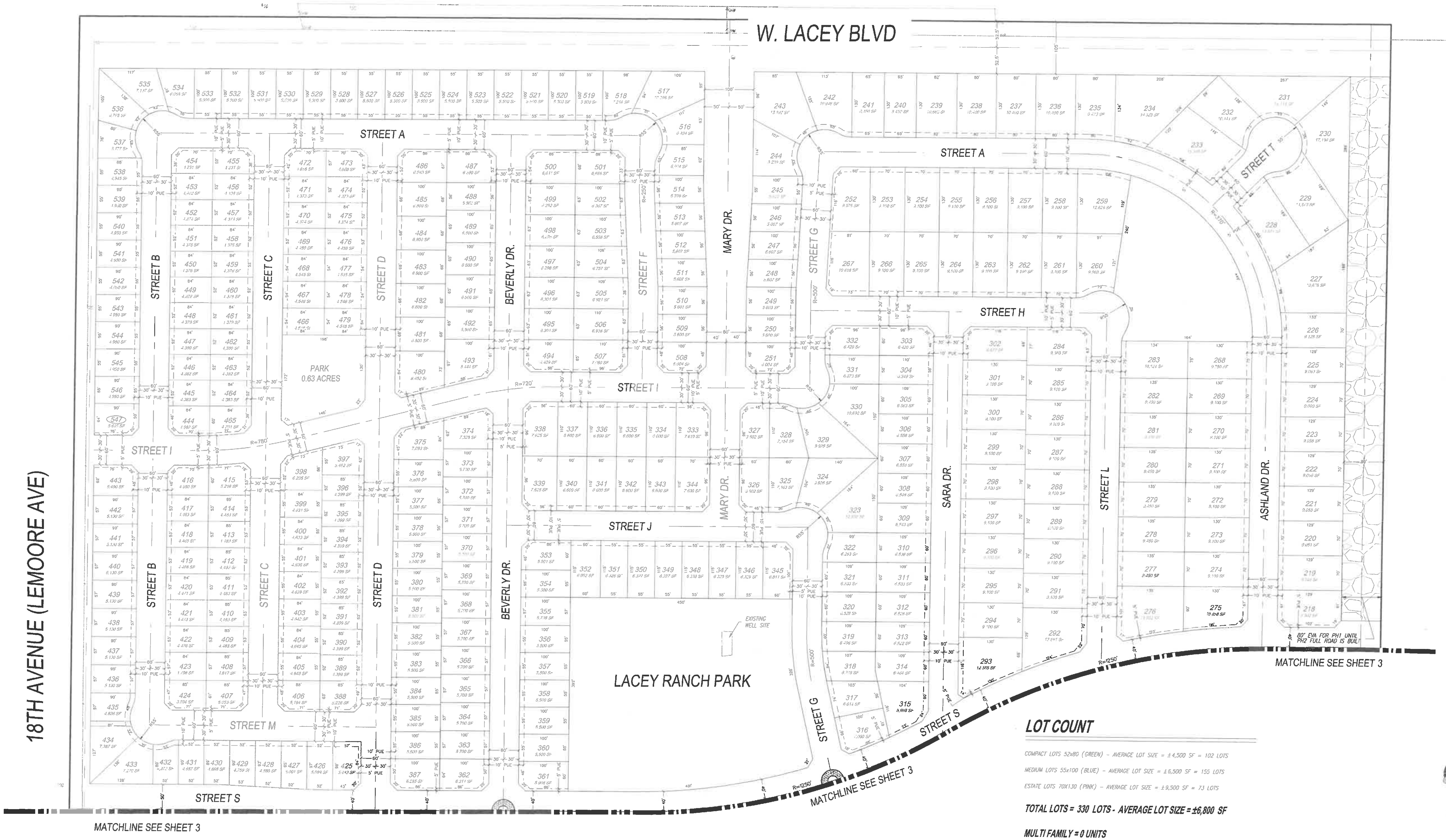
DRAWN BY: JML
CHECKED BY: DY
DATE: 4/08/2020

LICENSED LAND SURVEYOR PETER D. COHRS LS 5096 Exp. Date 6-30-21 STATE OF CALIFORNIA

SHEET NUMBER: 1 OF 3
JOB NUMBER: 19-037

# TENTATIVE MAP NO. 932

*IN THE CITY OF LEMOORE, KINGS COUNTY, STATE OF CALIFORNIA*
*SURVEYED ON JANUARY 28TH, 2020*
*BY PRECISION CIVIL ENGINEERING, INC.*




## LOT COUNT

COMPACT LOTS 52x80 (GREEN) - AVERAGE LOT SIZE = ±4,500 SF = 102 LOTS

MEDIUM LOTS 55x100 (BLUE) - AVERAGE LOT SIZE = ±6,500 SF = 155 LOTS

ESTATE LOTS 70X130 (PINK) - AVERAGE LOT SIZE = ±9,500 SF = 73 LOTS

**TOTAL LOTS = 330 LOTS - AVERAGE LOT SIZE = ±6,800 SF**

**MULTI FAMILY = 0 UNITS**

PLANNING ● SURVEYING ● CIVIL ENGINEERING
1234 O STREET, FRESNO, CALIFORNIA 93721
TEL: 559-449-4500 FAX: 559-449-4515
WWW.PRECISIONENG.NET

PRECISION CIVIL ENGINEERING, INC.

PROJECT TITLE: LACEY RANCH AREA MASTER PLAN
SHEET DESCRIPTION: TENTATIVE MAP
CITY OF: LEMOORE
COUNTY OF: KINGS

PREPARED FOR:
ASSEMI GROUP, INC.
1396 WEST HERNDON AVE. SUITE 101
FRESNO, CA 93711
559-445-9000

REVISIONS
LC 4-08-2020

DRAWN BY: JML
CHECKED BY: DY
DATE: 4/08/2020

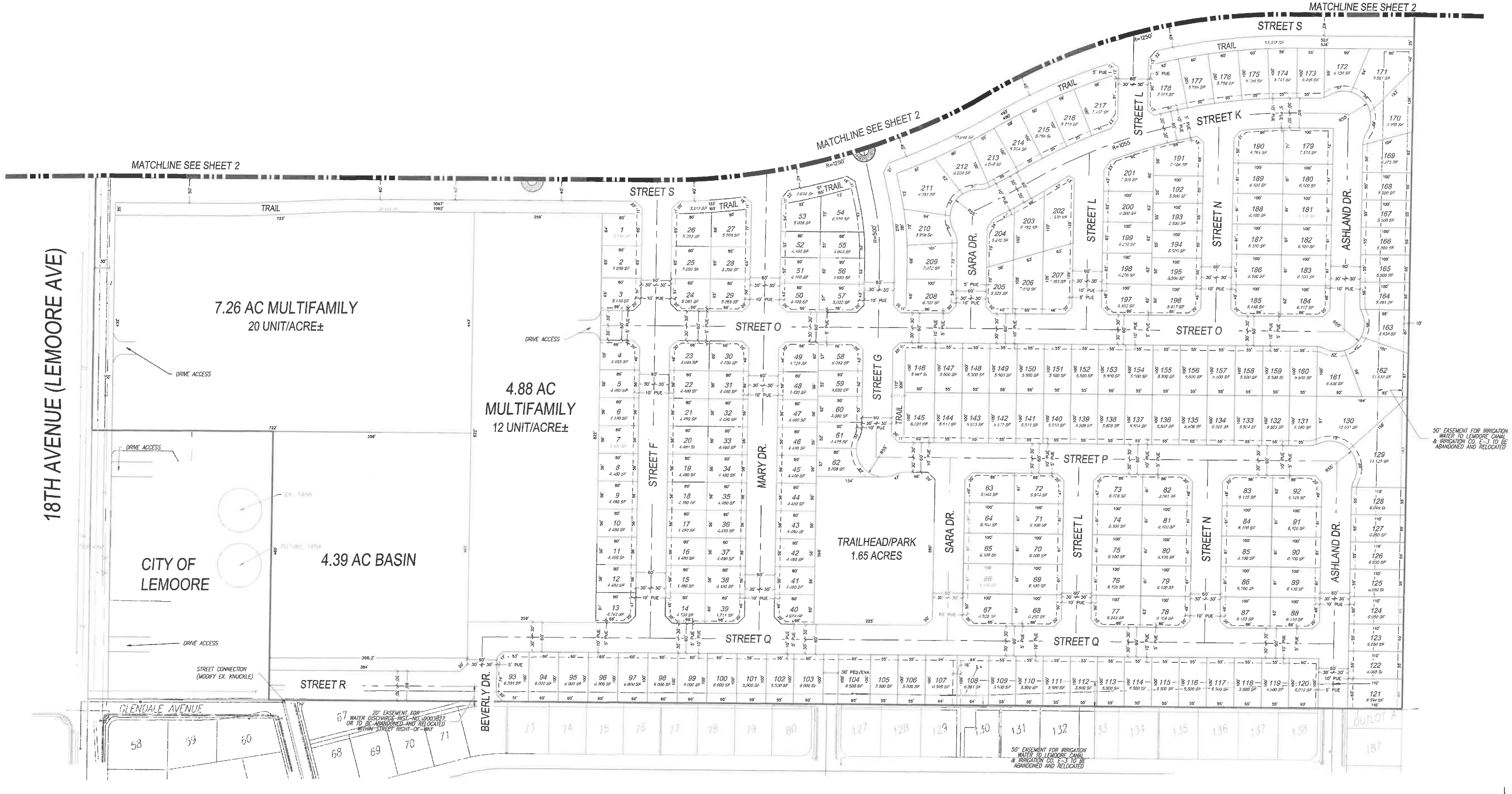
LICENSED LAND SURVEYOR PETER D. COHRS LS 5096 STATE OF CALIFORNIA

SHEET NUMBER: 2 OF 3

JOB NUMBER: 19-037

# TENTATIVE MAP NO. 932

IN THE CITY OF LEMOORE, KINGS COUNTY, STATE OF CALIFORNIA
SURVEYED ON JANUARY 28TH, 2020
BY PRECISION CIVIL ENGINEERING, INC.




## LOT COUNT

COMPACT LOTS 52x80 (GREEN) – AVERAGE LOT SIZE = ±4,500 SF = 62 LOTS

MEDIUM LOTS 55x100 (BLUE) – AVERAGE LOT SIZE = ±6,500 SF = 155 LOTS

ESTATE LOTS 70X130 (PINK) – AVERAGE LOT SIZE = ±9,500 SF = 0 LOTS

**TOTAL LOTS = 217 LOTS - AVERAGE LOT SIZE = ±6,800 SF**

**MULTI FAMILY = ±204 UNITS**

SCALE 1" = 100'
0 50' 100' 200'

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1234 O STREET, FRESNO, CALIFORNIA 93721
TEL: 559.449.4500 FAX: 559.449.4515
WWW.PRECISIONENG.NET

PRECISION CIVIL ENGINEERING, INC.

PROJECT TITLE: LACEY RANCH AREA MASTER PLAN
SHEET DESCRIPTION: TENTATIVE MAP
CITY OF: LEMOORE
COUNTY OF: KINGS

PREPARED FOR:
ASSEMI GROUP, INC.
1396 WEST HERNDON AVE. SUITE 101
FRESNO, CA 93711
559-445-9000

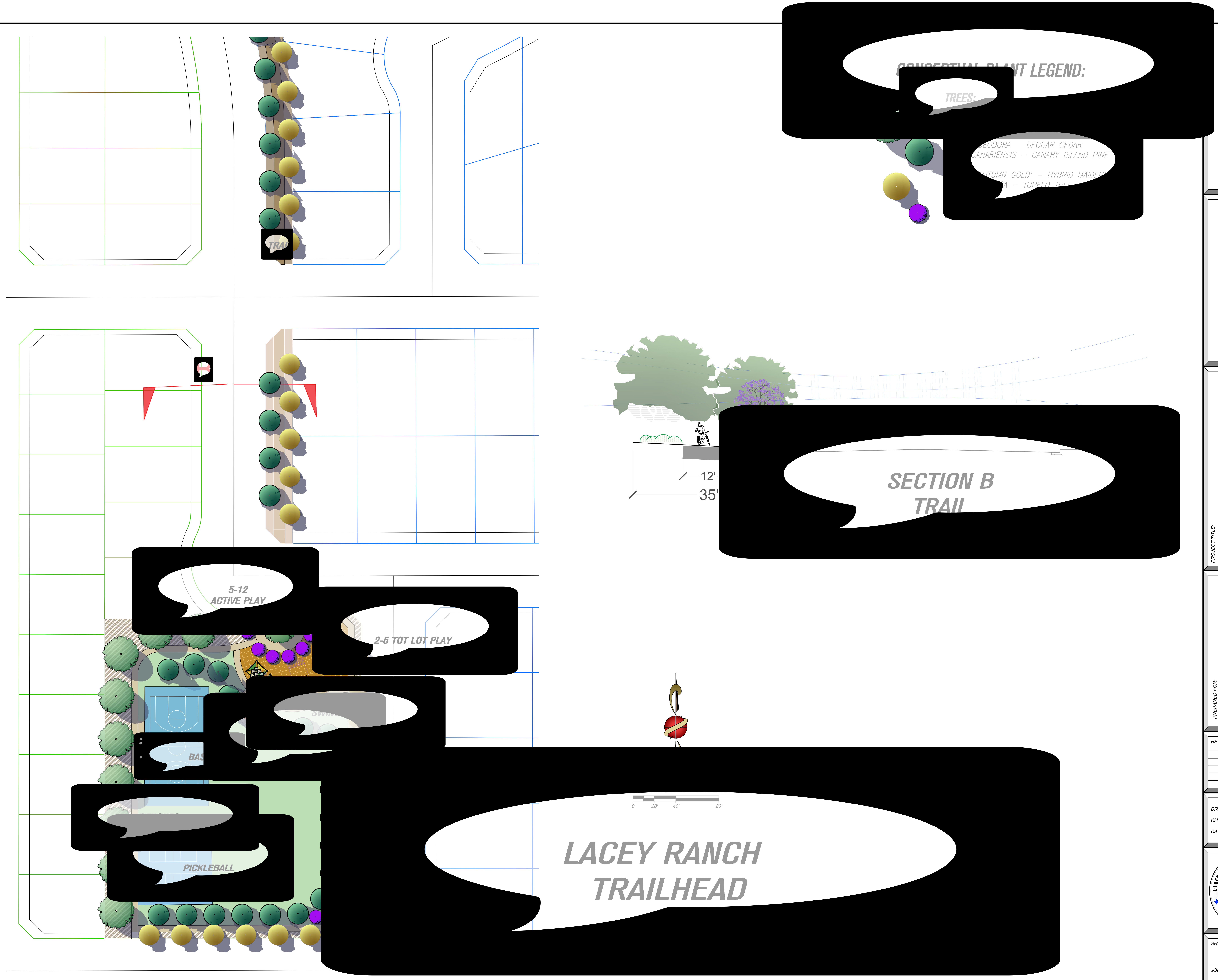
REVISIONS
LC 4-08-2020

DRAWN BY: JML
CHECKED BY: DY
DATE: 4/08/2020

LICENSED LAND SURVEYOR PETER D. COHRS LS 5096 Exp. Date 6-30-21 STATE OF CALIFORNIA

SHEET NUMBER: 3 OF 3
JOB NUMBER: 19-037

P:\CIVIL 3D PROJECTS\2019\19-037\SURVEY AND MAPPING\MAPS\TENTATIVE MAP\19-037 TENTATIVE MAP.DWG 5/21/2020 4:13:01 PM

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PRECISION CIVIL ENGINEERING, INC.

PROJECT TITLE: LACEY RANCH PARK

SHEET DESCRIPTION: CONCEPTUAL LANDSCAPE PLAN

CITY OF: LEMOORE

COUNTY OF: KINGS

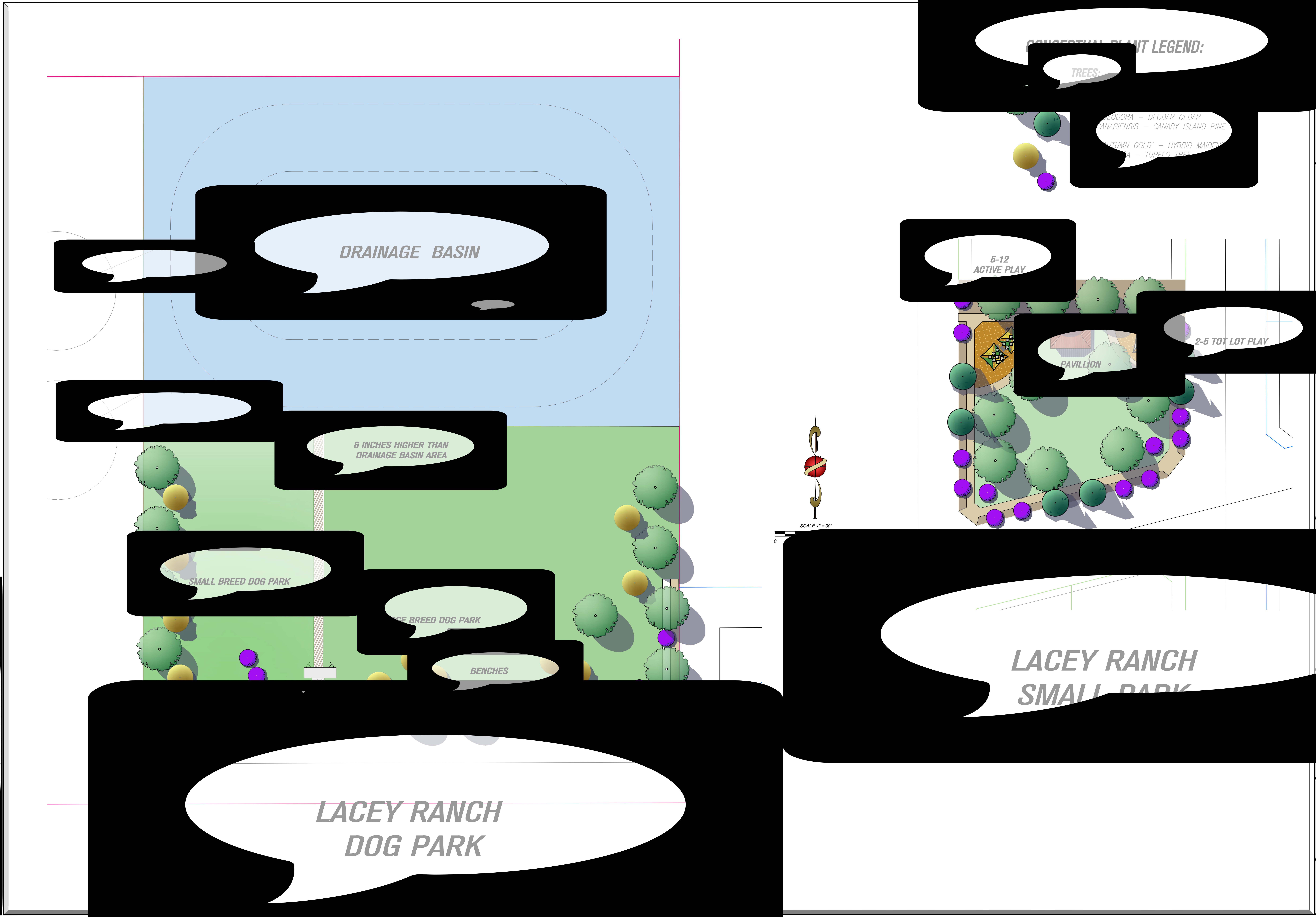
PREPARED FOR: ASSEMI GROUP, INC.
1396 W. HERNDON AVE., STE 110
FRESNO, CA 93711

REVISIONS

DRAWN BY: HP, MB
CHECKED BY: MJB
DATE: 02/18/2022

SHEET NUMBER: 1 OF 2

JOB NUMBER: 19-037

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PROJECT TITLE: LACEY RANCH PARK

SHEET DESCRIPTION: CONCEPTUAL LANDSCAPE PLAN

CITY OF: LEMOORE

COUNTY OF: KINGS

PREPARED FOR: [redacted]

DATE: 02/18/2022

SHEET NUMBER: 1 OF 2

JOB NUMBER: 19-037

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SHEET DESCRIPTION: CONCEPTUAL LANDSCAPE PLAN

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1396 W. HERNDON AVE., STE 110
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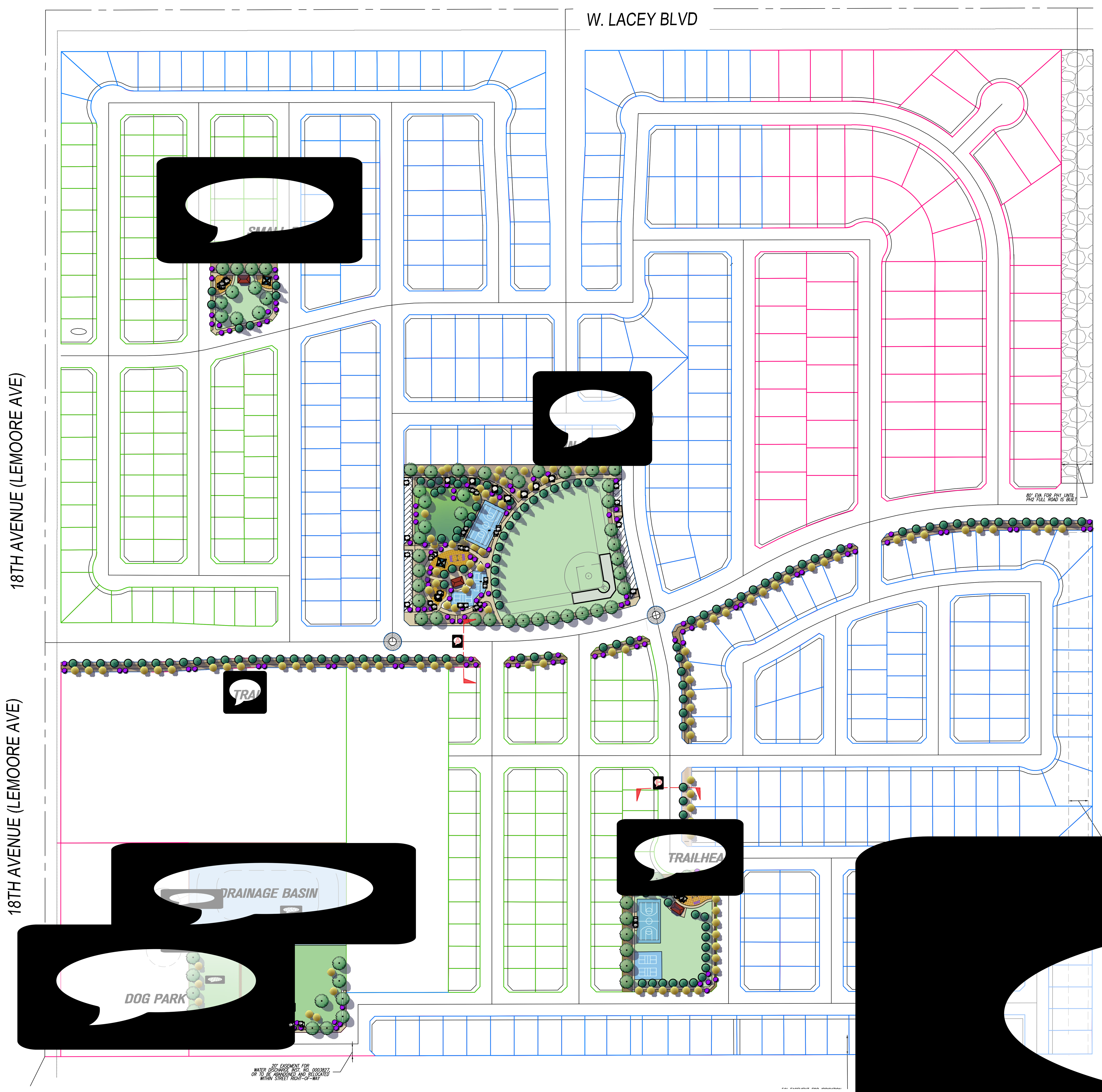


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LACEY RANCH OVERALL PLAN

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PROJECT TITLE: LACEY RANCH PARK

SHEET DESCRIPTION: CONCEPTUAL LANDSCAPE PLAN

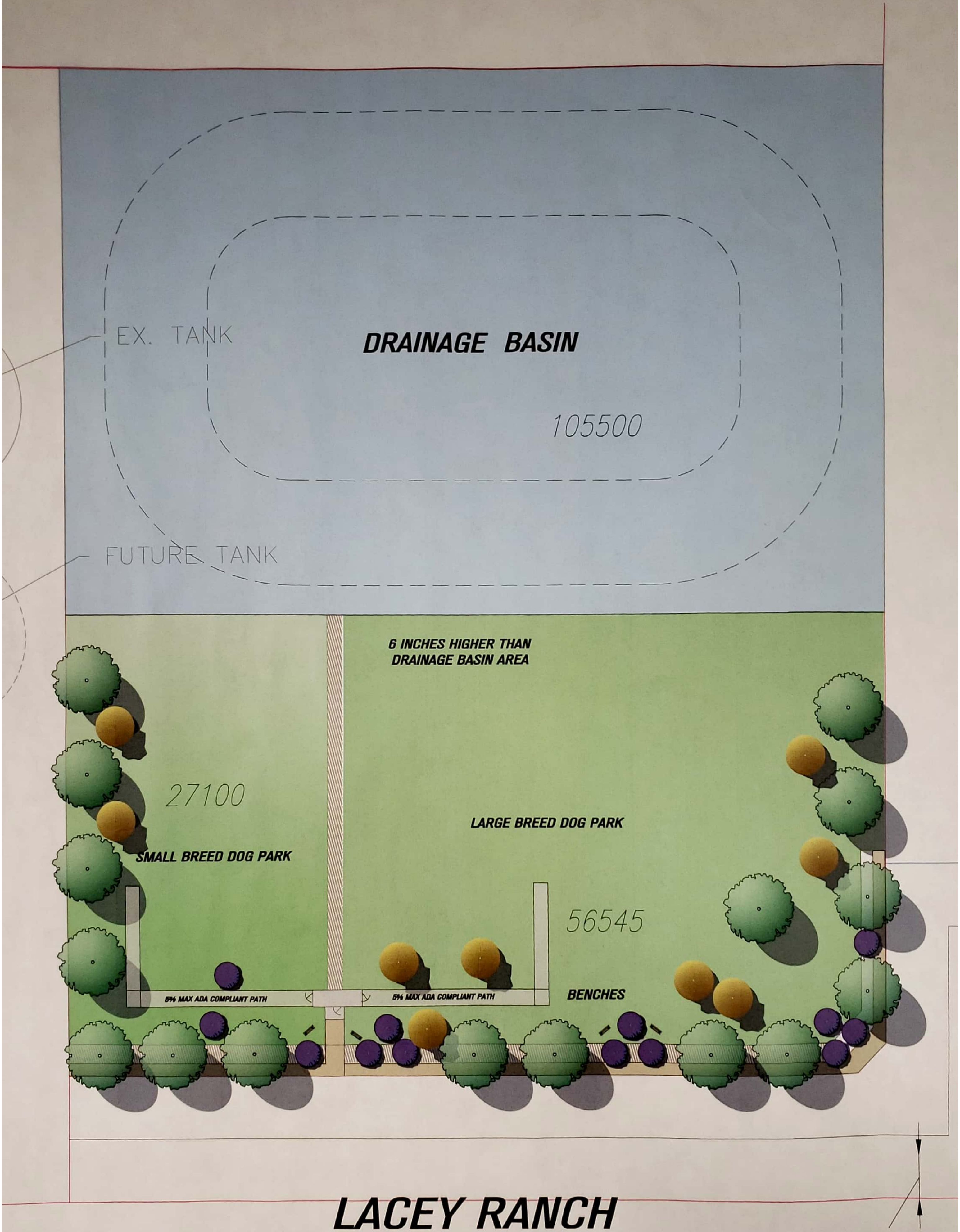
CITY OF: LEMOORE

COUNTY OF: KINGS

PREPARED FOR: ASSEMI GROUP, INC.
1396 W. HERNDON AVE., STE 110
FRESNO, CA 3711

CHECKED BY: MJB

DATE: 02/18/2022




# LACEY RANCH DOG PARK



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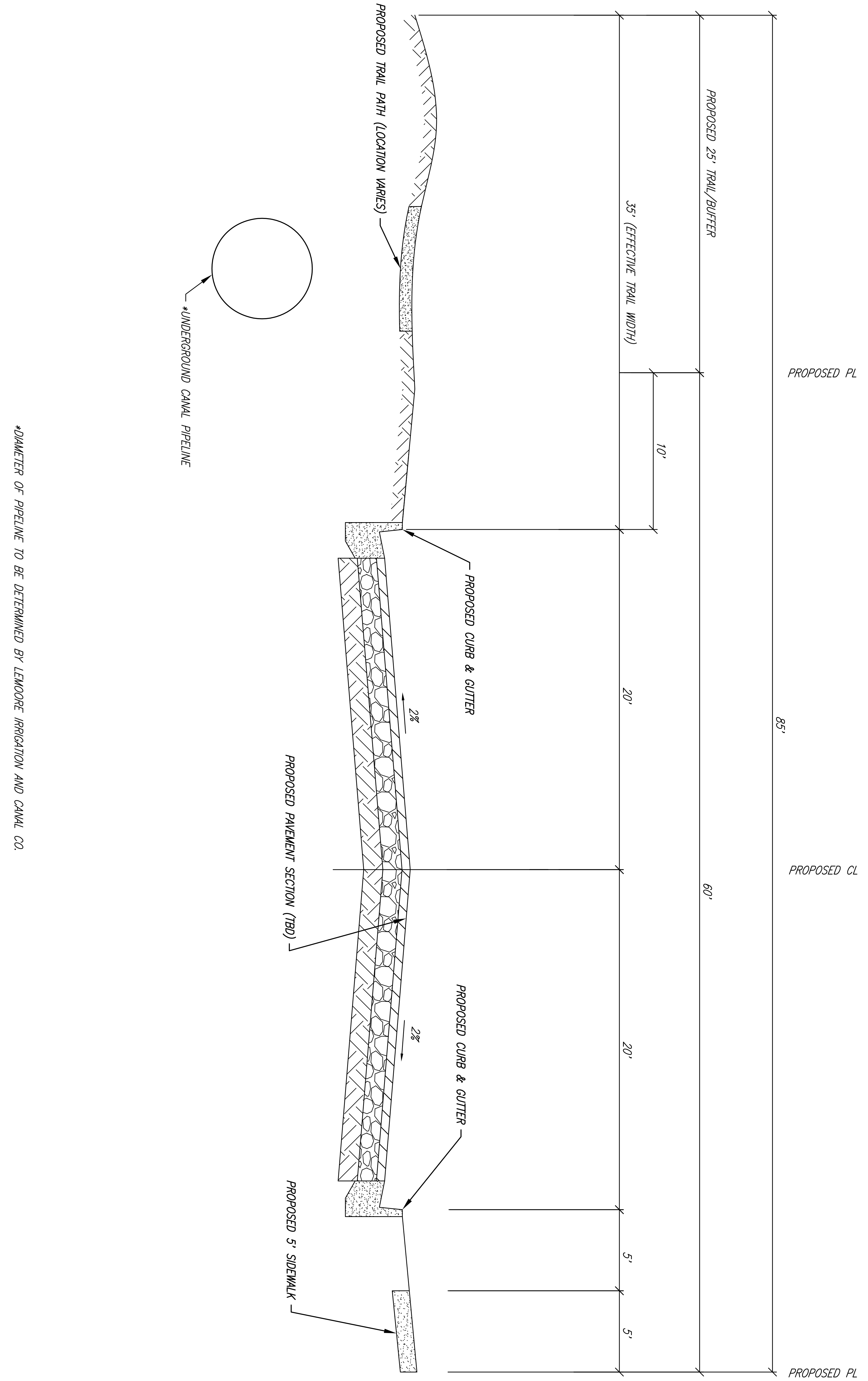


PROJECT TITLE: LACEY RANCH

SHEET DESCRIPTION: STREET CROSS-SECTIONS EXHIBIT

PREPARED FOR: ASSEMI GROUP, INC.
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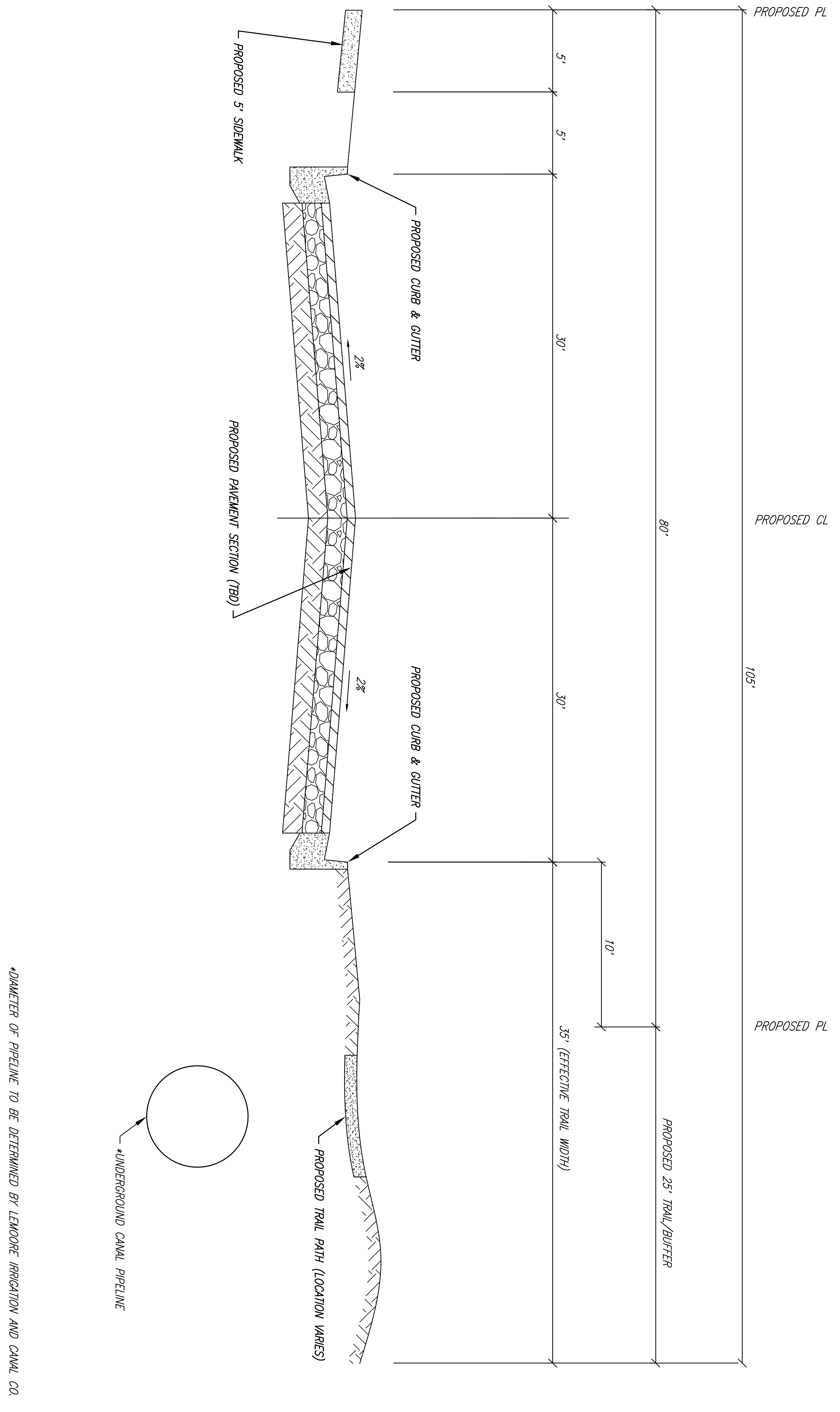
SHEET 2 OF 2 | DATE: 01-26-2022 | PCE : 19-037




PROJECT TITLE: LACEY RANCH

SHEET DESCRIPTION: STREET CROSS-SECTION EXHIBIT

PREPARED FOR: ASSEMI GROUP, INC.
1396 W HERNDON AVE. SUITE 101
FRESNO, CA 93711
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SHEET 1 OF 2 | DATE: 01-26-2022 | PCE : 19-037

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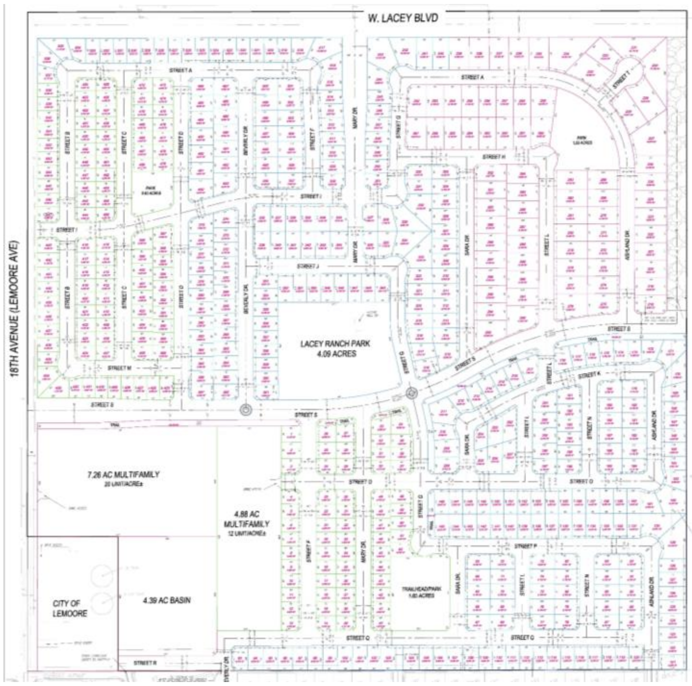


# DRAFT ENVIRONMENTAL IMPACT REPORT (STATE CLEARINGHOUSE #2020080314)

## Lacey Ranch Area Master Plan Project

January 2022

PREPARED FOR:

City of Lemoore
711 Cinnamon Drive
Lemoore, CA 93245

PREPARED BY:

Crawford & Bowen Planning, Inc.
113 N. Church Street, Suite 302
Visalia, CA 93291

# Draft Environmental Impact Report

## Lacey Ranch Area Master Plan Project

State Clearinghouse #2020080314

Prepared for:

City of Lemoore
711 Cinnamon Drive
Lemoore, CA 93245
(559) 924-6700
Contact: Nathan Olson, City Manager

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January 2022

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Appendix B – Agricultural Conversion Study
Appendix C – Air Quality and Greenhouse Gas / Energy Analysis Report
Appendix D – Biological Resource Evaluation
Appendix E – Cultural Resources Study
Appendix F – Phase I Environmental Site Assessment
Appendix G – SB 610 Water Supply Analysis
Appendix H – Noise Assessment
Appendix I-1 – Traffic Impact Analysis Report
Appendix I-2 – Vehicle Miles Traveled Analysis

# Executive Summary

# EXECUTIVE SUMMARY

## Introduction

This Draft Environmental Impact Report (Draft EIR or EIR) has been prepared consistent with the California Environmental Quality Act (CEQA) for the proposed Lacey Ranch Master Plan Project. Its intent is to inform the public, regulatory agencies and the City of Lemoore (City) decision makers of the potential environmental impacts the proposed Project would have on environmental factors as specified in the CEQA Guidelines. This Draft EIR, in its entirety, addresses and discloses potential environmental effects associated with construction and operation of the proposed Project, including direct, indirect, and cumulative impacts to the environmental resources identified in the CEQA Guidelines environmental checklist. The City of Lemoore is the "Lead Agency" pursuant to CEQA and is responsible for the preparation and distribution of the Draft EIR.

## CEQA Process

The City circulated an Initial Study and Notice of Preparation (IS/NOP) of an EIR for the proposed Project on August 20, 2020 for a 30-day public review period to trustee and responsible agencies, the State Clearinghouse, and the public. A scoping meeting (conducted virtually via a "Zoom" meeting) was held on September 14, 2020.

The next step in the process is circulation of this Draft EIR which will be distributed to the public for review and comment for at least 45 days. This EIR is organized as follows:

**Executive Summary:** Summarizes the analysis contained in the EIR.

**Chapter 1 – Introduction:** Provides a brief introduction to CEQA and the scope/contents of the DEIR.

**Chapter 2 – Project Description:** Describes the Project in detail. Includes Project location, objectives, environmental setting and regulatory context.

**Chapter 3 – Environmental Analysis:** Contains the CEQA checklist. Each topic discusses environmental/regulatory setting, Project impact analysis, mitigation measures and conclusions.

**Chapter 4 – Alternatives:** Describes and evaluates alternatives to the Project. The proposed Project is compared to each alternatives and potential environmental impacts are analyzed.

**Chapter 5 – Other CEQA Sections:** Describes other required sections such as environmental effects that cannot be avoided, social effects, growth inducement, etc.

**Appendices:** Following the text of the Draft EIR, several appendices and technical studies have been included as reference material.

## Project Location

The proposed Project is located on approximately 156-acres immediately north of the City of Lemoore in Kings County and is bounded by W. Lacey Blvd to the north and 18th Avenue to the west. The Project is on assessor parcel number 021-030-057-000. See Figure 1 – Regional Location, Figure 2 – Vicinity Map and Figure 3 – Site Aerial in Chapter Two – Project Description. The site lies within a portion of the NW quarter of Section 35, Township 18 South, Range 20 East, Mount Diablo Base and Meridian.

## Project Description Summary

Within the Lacey Ranch Area Master Plan, the Project applicant is proposing to subdivide and develop approximately 156 acres of land into a planned residential community with a mix of single-family and multi-family housing units. The Project will be constructed in four phases, as is outlined below. The exact numbers of each housing type may vary slightly, depending on final density, but there will be a maximum of 825 housing units in total. Specific housing types include:

- ±164 compact lots with an average lot size of 4,500 square feet
- ±310 medium lots with an average lot size of 6,500 square feet
- ±73 estate lots with an average lot size of 9,500 square feet
- ±145 multifamily units at 20 units per acre
- ±59 multifamily units at 12 units per acre

The Project includes a total of four parks for a total of 7.9 acres and 1.64 acres of trail area. The 1.64 acres of trail area will be designated and zoned consistent with the designations and zoning of their adjacent parcels. Refer to Figure 4 – Site Plan in Chapter Two – Project Description.

Proposed Project construction will require site preparation activities such as removal of the existing alfalfa crop and site grading activities. Construction is expected to occur over 16 years as determined by market demands and will be constructed over four phases, broken down as follows:

- Phase 1 – 125 single family lots and 90 multifamily lots
- Phase 2 – 125 single family lots and 100 multifamily lots
- Phase 3 – Dependent on market conditions
- Phase 4 – Dependent on market conditions

It is anticipated that the Project would begin development in 2022. Refer to Chapter Two – Project Description for the full description of the Project.

## Project Objectives

In accordance with CEQA Guidelines Section 15124(b), the following are the City of Lemoore's Project objectives:

- To provide a variety of housing opportunities with a range of densities, styles, sizes and values that will be designed to satisfy existing and future demand for quality housing in the area.
- To provide a sense of community and walkability within the development through the use of street patterns, parks/trails, landscaping and other project amenities.
- To provide a residential development that is compatible with surrounding land uses and is near major services.
- To provide a residential development that assists the City in meeting its General Plan and Housing Element requirements and objectives.

## Summary of Environmental Impacts

As described in Chapter 3, it was determined that all impacts were either less than significant, or could be mitigated to a less than significant level with the exception of the following:

- Agriculture - Loss of Farmland (project and cumulative level)
- Biological resources (cumulative level only)
- Hydrology – Water Supply (cumulative level only)
- Transportation -Vehicle Miles Traveled impacts (project and cumulative level)

Even with the mitigation measures described in Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, of this Draft EIR, impacts in these issue areas would be significant and unavoidable. Mitigation measures are listed in Table ES-1, Mitigation Monitoring and Reporting Program.

## Summary of Project Alternatives

CEQA Guidelines Section 15126.6 requires the consideration of a range of reasonable alternatives to the proposed Project that could feasibly attain most of the objectives of the proposed Project. This EIR analyzed the following alternatives:

- **No Project Alternative:** Under this Alternative, the Project would not be constructed and the site would remain as agricultural land.
- **Alternate Locations Alternative:** Under this Alternative, the Project would be developed on a different site of similar size and scale.
- **Reduced (50%) Project Alternative:** Under this Alternative, the site would be developed with reduced residential densities which would result in development of fewer number of units and a decrease in population as compared to the proposed Project. This alternative would keep the same acreage, but would reduce the number of units from 825 to 412. All other project components, including overall acreage would remain (parks, etc.). This would result in larger lot sizes as compared to the proposed Project.

See Chapter 4 – Alternatives for a full description of potential environmental impacts associated with each alternative.

## Mitigation Monitoring and Reporting Program

State law requires that a public agency adopt a monitoring program for mitigation measures that have been incorporated into the approved Project to reduce or avoid significant effects on the environment. The purpose of the monitoring program is to ensure compliance with environmental mitigation during Project implementation and operation. Since there are potentially significant impacts requiring mitigation associated with the Project, a Mitigation Monitoring Program will be included in the Project's Final EIR and is included herein on the following pages.

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
|---|---|---|---|---|
| **Biological Resources** | | | | |
| **BIO – 1**:<br><br>1. To the extent practicable, construction shall be scheduled to avoid the Swainson's hawk nesting season, season (February 15 to August 31).<br>2. If it is not possible to schedule construction between September and February, prior to commencement of ground disturbance activities, a qualified biologist shall conduct surveys for Swainson's hawk in accordance with the Swainson's Hawk Technical Advisory Committee's *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (SWTAC 2000, Appendix C). Surveys shall be conducted within a 10-mile radius around the Project site to identify the nearest nest, which will determine the habitat mitigation ratio. If no Swainson's hawk nests are observed, no further action is necessary. CDFW shall be consulted if an active nest is found within 0.5 miles of the Project site. A copy of the survey report shall be submitted to the City of Lemoore Community Development Department. | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore and CDFW | |
| **BIO – 2:**<br>If an active Swainson's hawk nest is discovered at any time within 0.5 mile of active construction, a qualified biologist shall complete an assessment of the potential for current construction activities to impact the nest. The assessment shall consider the type of construction activities, the location of construction relative to the nest, the visibility of construction activities from the nest location, and other existing disturbances in the area that are not related to construction activities of this Project. Based on this assessment, the biologist shall determine if construction activities can proceed, and the level of nest monitoring required. Construction activities shall not occur within 500 feet of an | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore and CDFW | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
|---|---|---|---|---|
| active nest but depending upon conditions at the site this distance may be reduced. Full-time monitoring to evaluate the effects of construction activities on nesting Swainson's hawks may be required. The qualified biologist shall have the authority to stop work if it is determined that Project construction is disturbing the nest. These buffers may need to increase depending on the sensitivity of the nesting Swainson's hawk to disturbances and at the discretion of the qualified biologist. No avoidance would be needed if construction occurs near a known Swainson's hawk nest outside of the Swainson's hawk nesting season. | | | | |
| **BIO -3:**<br>Prior to the issuance of grading or building permits, the Project proponent shall consult with the California Department of Fish and Wildlife (CDFW) regarding compensation for the loss of 156 acres of Swainson's hawk foraging habitat. Potential compensation may include a compensatory ratio of 0.5:1 up to 1:1 ratio, depending on the location of active Swainson's hawk nests. Evidence of consultation with CDFW and payment of compensation shall be submitted to the City of Lemoore Community Development Department.). | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore and CDFW | |
| **BIO – 4**:<br>1. To the extent practicable, construction shall be scheduled to avoid the Swainson's hawk nesting season, season (February 15 to August 31).<br>2. If it is not possible to schedule construction between September 15 and February 15, a pre-construction clearance survey for nesting birds shall be conducted by a qualified no more than 14 days prior to the start of construction activities. During this survey, the qualified biologist shall inspect all potential nest substrates in and immediately adjacent to the | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore and CDFW | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
|---|---|---|---|---|
| impact areas, including within 250 feet in the case of raptor nests and within 100 feet for nests of all other birds. If an active nest is found close enough to the construction area to be disturbed by these activities, the qualified biologist shall determine the extent of a construction-free buffer to be established around the nest. If work cannot proceed without disturbing the nesting birds, work shall be halted or redirected to other areas until nesting and fledging are completed or the nest has failed for non-construction related reasons. | | | | |
| **BIO – 5:**<br>Within 14 days prior to the start of Project ground-disturbing activities, a pre-activity survey with a 500-foot buffer where land access is permitted shall be conducted by a qualified biologist knowledgeable in the identification of burrowing owl, American badger, San Joaquin kit fox (SJKF) and other special status species that are known to be in the area, and approved by the CDFW. Surveys need not be conducted for all areas at one time; they may be phased so that surveys occur within 14 days of the portion of the Project site that will be disturbed. If dens/burrows that could support any of these species are discovered during the pre-activity surveys, the avoidance buffers outlined below shall be established. No work would occur within these buffers unless the biologist approves and monitors the activity. If no listed or special status species is observed during the preconstruction clearance survey, no further action in necessary.<br><br>**Burrowing Owl (active burrows)**<br>• Non-breeding season: September 1 – January 31 – 160 feet<br>• Breeding season: February 1 – August 31 – 250 feet | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore and CDFW | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
|---|---|---|---|---|
| **American Badger/SJKF**<br>• Potential or Atypical den – 50 feet<br>• Known den – 100 feet<br>• Natal or pupping den – 500 feet, unless otherwise specified by CDFW.<br><br>If burrowing owl are found within these recommended buffers and avoidance is not possible, burrow exclusion shall be conducted by qualified biologists and only during the non-breeding season, before breeding behavior is exhibited and after the burrow is confirmed empty through non-invasive methods, such as surveillance. Replacement of occupied burrows with artificial burrows shall occur at a ratio of one burrow collapsed to one artificial burrow constructed (1:1) to mitigate for evicting burrowing and the loss of burrows. Burrowing owl may attempt to colonize or re-colonize an area that will be impacted; thus, ongoing surveillance shall occur at excluded burrows at a rate that is sufficient to detect burrowing owl if they return.<br><br>If, during construction activities, a live burrowing owl, American badger, or SJKF is encountered, all construction activity should stop in the affected area until the animal leaves of its own volition. The special-status species should be avoided by construction activities and construction workers and allowed to leave the Project Site without harassment | | | | |
| **BIO – 6:**<br>Prior to the initiation of construction activities, all construction personnel should attend a Worker Environmental Awareness Training program developed by a qualified biologist. Any personnel associated with | Project Applicant | Prior to issuance of grading or | City of Lemoore and CDFW | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
|---|---|---|---|---|
| construction that did not attend the initial training shall be trained by the authorized biologist prior to working on the project site. Any employee responsible for the operations and maintenance or decommissioning of the project facilities shall also attend the Worker Environmental Awareness Training program prior to starting work on the project and on an annual basis.<br>The Program shall be developed and presented by the project qualified biologist(s) or designee approved by the qualified biologist(s). The program shall include information on the life histories of special-status species with potential to occur on the Project, their legal status, course of action should these species be encountered on-site, and avoidance and minimization measures to protect these species. It shall include the components described below:<br><br>a. Information on the life history and identification of special-status species that may occur or that may be affected by Project activities. The program shall also discuss the legal protection status of each such species, the definition of "take" under the Federal Endangered Species Act and California Endangered Species Act, measures the Project proponent/operator shall implement to protect the species, reporting requirements, specific measures for workers to avoid take of special-status plant and wildlife species, and penalties for violation of the requirements outlined in the California Environmental Quality Act mitigation measures and agency permit requirements.<br>b. An acknowledgement form signed by each worker indicating that the Worker Environmental Awareness Training and Education program has been completed shall be kept on file at the construction site.<br>c. A copy of the training transcript and/or training video, as well as a list of the names of all personnel who attended the Worker Environmental Awareness Training and Education program, and signed | | building permits | | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
|---|---|---|---|---|
| acknowledgement forms shall be submitted to the City of Lemoore Community Development Department.<br>d. A sticker shall be placed on hard hats indicating that the worker has completed the Worker Environmental Awareness Training and Education program. Construction workers shall not be permitted to operate equipment within the construction areas unless they have attended the Worker Environmental Awareness Training and Education Program and are wearing hard hats with the required sticker.<br>e. The construction crews and contractor(s) shall be responsible for preventing unauthorized impacts from project activities to sensitive biological resources that are outside the areas defined as subject to impacts by Project permits. Unauthorized impacts may result in project stoppage, and/or fines depending on the impact and coordination with the California Department of Fish and Wildlife and/or U.S. Fish and Wildlife Service. | | | | |
| **BIO – 7:**<br>Prior to issuance of any grading or building permit, the Project proponent/developer shall submit a final Delineation report to the City of Lemoore. A copy of this report shall also be provided to the Regional Water Quality Control Board (RWQCB), California Department of Fish & Wildlife (CDFW) and U.S. Army Corps of Engineers (USACE) (as applicable). The report shall include information as shown below as a plan if necessary and shall outline compliance to the following:<br>1. Delineation of all jurisdictional features at the project site. Potential jurisdictional features within the project boundary identified in the jurisdictional delineation report may be shown in plan form.<br>2. If the Project has a potential to directly or indirectly impact jurisdictional aquatic resources, a formal aquatic resource delineation of these areas | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore and CDFW | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
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| shall be performed by a qualified professional to determine the extent of agency jurisdiction and permits/authorizations from the appropriate regulating agencies (RWQCB, CDFW, and USACE) shall be obtained prior to disturbance to jurisdictional features.<br><br>If it is determined that drainage is jurisdictional and cannot be avoided, the Project proponent shall obtain a Section 401 Waters Quality Certification from the RWQCB, a Section 404 permit from USACE and a Lake and Streambed Alteration Agreement from the CDFW, if required prior to impacting any waters.<br><br>As part of these authorizations, compensatory mitigation may be required by the regulating agencies to offset the loss of aquatic resources. If so, and as part of the permit application process, a qualified professional shall draft a Mitigation and Monitoring Plan to address implementation and monitoring requirements under the permit to ensure that the Project would result in no net loss of habitat functions and values. The Plan shall contain, at a minimum, mitigation goals and objectives, mitigation location, a discussion of actions to be implemented to mitigate the impact, monitoring methods and performance criteria, extent of monitoring to be conducted, actions to be taken in the event that the mitigation is not successful, and reporting requirements. The Plan shall be approved by the appropriate regulating agencies and compensatory mitigation shall take place either on site or at an appropriate off-site location.<br><br>3. Any material/spoils generated from project activities containing hazardous materials shall be located away from jurisdictional areas or special-status habitat and protected from storm water run-off using temporary perimeter sediment barriers such as berms, silt fences, fiber | | | | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
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| rolls, covers, sand/gravel bags, and straw bale barriers, as appropriate. Protection measures should follow project-specific criteria as developed in a Stormwater Pollution Prevention and Protection Plan (SWPPP).<br><br>4. Equipment containing hazardous liquid materials shall be stored on impervious surfaces or plastic ground covers to prevent any spills or leakage from contaminating the ground and at least 50 feet outside the delineated boundary of jurisdictional water features.<br>Any spillage of material shall be stopped if it can be done safely. The contaminated area shall be cleaned, and any contaminated materials properly disposed. For all spills, the project foreman or designated environmental representative shall be notified. | | | | |
| **Cultural Resources** | | | | |
| **CUL-1:**<br>Prior to any ground disturbance, a surface inspection of the site shall be conducted by a Tribal Monitor. The Tribal Cultural Staff shall monitor the site during grading activities. The Tribal Staff shall provide pre-project-related activities briefings to supervisory personnel and any excavation contractor, which will include information on potential cultural material finds, and any excavation contractor, which will include information on potential cultural material finds, and on the procedures, to be enacted if resources are found. Prior to any ground disturbance, the applicant shall offer the Santa Rosa Rancheria Tachi Yokut Tribe the opportunity to provide a Native American Monitor during ground-disturbing activities. Tribal participation would be dependent upon the availability and interest of the tribe. | Project Applicant | Prior to issuance of grading or building permits / ongoing | City of Lemoore | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
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| **CUL-2:** In the event that historical or archaeological cultural resources are discovered during project-related activities or decommissioning, operations shall stop within 100 feet of the find, and a qualified archeologist shall determine whether the resource requires further study. The qualifies archaeologist shall determine the measures that shall be implemented to protect the discovered resources including, but not limited to, excavation of the finds and evaluation of he finds and evaluation of the finds in accordance with § 15064.5 of the CEQA Guidelines. Measures may include avoidance, preservation in-place, recordation, additional archaeological resting, and data recovery, among other options. Any previously undiscovered resources found during project-related activities within the project area shall be recorded on appropriate Department of Parks and Recreation forms and evaluated for significance. No further ground disturbance shall occur in the immediate vicinity of the discovery until approved by the qualified archaeologist.<br>The Lead Agency, along with other relevant or tribal officials, shall be contacted upon the discovery of cultural resources to begin coordination on the disposition of the find(s). Treatment of any significant cultural resources shall be undertaken with the approval of the Lead Agency. | Project Applicant | During construction | City of Lemoore | |
| **CUL-3:** Upon coordination with the Lead Agency, any archaeological artifacts recovered shall be donated to an appropriate tribal custodian or a qualified scientific institution where they would be afforded applicable cultural resources laws and guidelines. | Project Applicant | During Construction | City of Lemoore | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
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| **CUL-4:** If human remains are discovered during project-related activities or operational activities, further excavation or disturbance shall be prohibited pursuant to Section 7050.5 of the California Health and Safety Code. The specific protocol, guidelines, and channels of communication outlined by the Native American Heritage Commission, in accordance with Section 7050.5 of the Health and Safety Code, Section 5097.98 of the Public Resources Code (Chapter 1492, Statutes of 1982, Senate Bill 297), and Senate Bill 447 (Chapter 44, Statutes of 1987) shall be followed. Section 7050.5(c) shall guide the potential Native American involvement, in the event of discovery of human remains, at the direction of the County Coroner. | Project Applicant | During Construction | City of Lemoore | |
| **Geology and Soils** | | | | |
| **GEO-1:** Prior to the issuance of building or grading permits for the project, the project proponent shall conduct a full geotechnical study to evaluate soil conditions and geologic hazards on the project site and submit it to the City of Lemoore Building Division for review and approval. The project proponent shall retain a California registered and licensed geotechnical engineer to design the project facilities to withstand probable seismically induced ground shaking at the site. All grading and construction on site shall adhere to the specifications, procedures, and site conditions contained in the final design plans, which shall be fully compliant with the seismic recommendations of the California registered professional engineer. | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
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| a. The geotechnical study must be signed by a California registered and licensed professional geotechnical engineer or engineering geologist and must include the following:<br>I. Location of fault traces and potential for surface rupture and ground shaking potential.<br>II. Maximum considered earthquake and associated ground acceleration for design.<br>III. Potential for seismically induced liquefaction, landslides, differential settlement, and unstable soils.<br>IV. Stability of any existing or proposed cut-and-fill slopes.<br>V. Identification of collapsible or expansive soils.<br>VI. Foundation material type.<br>VII. Potential for wind erosion, water erosion, sedimentation, and flooding.<br>VIII. Location and description of unprotected drainage that could be impacted by the proposed development.<br>IX. Recommendations for placement and design of facilities, foundations, and remediation of unstable ground. | | | | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
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| b. The project proponent shall determine the final siting of project facilities based on the results of the geotechnical study and implement recommended measures to minimize geologic hazards.<br><br>c. The City of Lemoore Building Division shall evaluate any final facility siting design developed prior to the issuance of any building or grading permits to verify that geological constraints have been avoided or mitigated.<br><br>d. The final structural design shall be subject to approval and follow-up inspection by the City of Lemoore Building Division. Final design requirements shall be provided to the on-site construction supervisor and the City of Lemoore Building Inspector to ensure compliance. A copy of the approved design shall be submitted to the City of Lemoore Community Development Department. | | | | |
| **GEO – 2:**<br>Prior to issuing of grading or building permits, the project applicant shall submit to the City: (1) the approved Stormwater Pollution Prevention Plan (SWPPP) and (2) the Notice of Intent (NOI) to comply with the General National Pollutant Discharge Elimination System (NPDES) from the Central Valley Regional Water Quality Control Board. The requirements of the SWPPP and NPDES shall be incorporated into design specifications and construction contracts. Recommended Best Management Practices for the construction phase may include the following:<br>• Stockpiling and disposing of debris, concrete, and soil properly; | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
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| • Protecting existing storm drain inlets and stabilizing disturbed areas;<br>• Implementing erosion controls;<br>• Properly managing construction materials;<br>• Managing waste, aggressively controlling litter, and implementing sediment controls; and<br>• Evidence of the approved SWPPP shall be submitted to the Lead Agency. | | | | |
| **GEO – 3:**<br>If any paleontological resources are encountered during ground-disturbance activities, all work within 25 feet of the find shall halt until a qualified paleontologist as defined by the Society of Vertebrate Paleontology Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (2010), can evaluate the find and make recommendations regarding treatment. Paleontological resource materials may include resources such as fossils, plant impressions, or animal tracks preserved in rock. The qualified paleontologist shall contact the Natural History Museum of Los Angeles County or other appropriate facility regarding any discoveries of paleontological resources.<br>If the qualified paleontologist determines that the discovery represents a potentially significant paleontological resource, additional investigations and fossil recovery may be required to mitigate adverse impacts from project implementation. If avoidance is not feasible, the paleontological resources shall be evaluated for their significance. If the resources are not significant, avoidance is not necessary. If the resources are significant, they shall be avoided to ensure no adverse effects, or such effects must be mitigated. Construction in that area shall not resume until the resource appropriate measures are recommended | Project Applicant | During Construction | City of Lemoore | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
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| or the materials are determined to be less than significant. If the resource is significant and fossil recovery is the identified form of treatment, then the fossil shall be deposited in an accredited and permanent scientific institution. Copies of all correspondence and reports shall be submitted to the Lead Agency. | | | | |
| **Hazards and Hazardous Materials** | | | | |
| **HAZ – 1:**<br>Prior to the issuance of grading or building permits, the Project proponent or contractor shall:<br>i. Provide a site plan that clearly delineates the locations of all known oil wells and the 10-foot no-build radius around each well. A copy of the map shall be submitted to the California Department of Conservation, Geologic Energy Management Division (CalGEM), and the City of Lemoore Community Development Department. | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore | |
| **HAZ – 2:**<br>In the event that other abandoned or unrecorded wells are uncovered or damaged during excavation or grading activities, all work shall cease in the vicinity of the well, and the California Department of Conservation, Geologic Energy Management Division (CalGEM), shall be contacted for requirements and approval; copies of said approvals shall be submitted to the City of Lemoore Community Development Department CalGEM, may determine that remedial plugging operations may be required. | Project Applicant | During construction | City of Lemoore | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
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| **HAZ-3:** As a best management practice, prior to the issuance of grading permits, the areas of surface staining located near the diesel AST and engine shall be excavated, drummed, and removed from the subject property for proper off-site disposal. Additionally, secondary containment shall be provided for the diesel AST in order to prevent an accidental release from adversely impacting the subject property. Evidence of compliance shall be submitted to the City of Lemoore Community Development Department. | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore | |
| **Hydrology and Water Quality** | | | | |
| **HYD - 1:**<br>a) Prior to issuance of grading permits or ground disturbance, the Project proponent shall provide approval of the proposed annexation into the City of Lemoore's service area.<br>b) The Project proponent shall offer the City 100 water shares (150 acre feet) of water. Documentation of the annexation and offer of water shall be provided to the City Community Development Department. | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore | |
| **HYD - 2:** Prior to issuance of building permits, the Project proponent shall pay water service impact fees for new development. The fee, or equivalent in-lieu, will be determined by the City of Lemoore. Evidence of the payment of impact fees shall be submitted to the City Community Development Department. | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore | |
| **Noise** | | | | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
|---|---|---|---|---|
| **NOI - 1:**<br>a) All construction equipment shall be equipped with noise control devices (e.g. mufflers) in accordance with manufacturers' specifications throughout construction. Construction equipment shall be periodically inspected to ensure proper maintenance and presence of noise control devices (e.g. lubrication, mufflers that do not leak, and shrouding).<br>b) Equipment staging and laydown areas shall be located at the furthest practical distance from nearby residential land uses. To the extent possible, staging and laydown areas should be located at least 500 feet of existing residential dwellings.<br>c) c) Haul trucks shall not be allowed to idle for periods greater than five minutes, except as needed to perform a specified function (e.g., concrete mixing). | Project Applicant | During Construction | City of Lemoore | |
| **NOI - 2:**<br>Prior to the issuance of grading permits, signs legible at a distance of 50 feet shall be posted at the construction site and near adjacent sensitive receptors displaying hours of construction activities and providing the contact phone number of a designated noise disturbance coordinator. | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore | |
| **Public Services** | | | | |
| **PUB-1:**<br>Prior to issuance of building permits, the Project proponent shall pay fire service impact fees for new development. The fee, or equivalent in-lieu, will be determined by the Lemoore Volunteer Fire Department in conjunction with the City of Lemoore. Evidence of the payment of impact fees shall be submitted to the City Community Development Department. | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
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| **PUB-2:** Prior to issuance of building permits, the Project proponent shall pay police service impact fees for new development. The fee, or equivalent in-lieu, will be determined by the Lemoore Police Department in conjunction with the City of Lemoore. Evidence of the payment of impact fees shall be submitted to the City Community Development Department. | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore | |
| **PUB-3:** Prior to issuance of building permits, the Project proponent shall pay school impact fees. The Project's school impact fees will be determined by the Lemoore Union High School District and the Lemoore Union Elementary School District. Evidence of the payment of impact fees shall be submitted to the City Community Development Department. | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore | |
| **PUB-4:** Prior to issuance of building permits, the Project proponent shall pay parkland impact fees or in-lieu equivalent to maintain the City's established requirement of five acres of parkland per thousand residents. The impact fees or in-lieu equivalent will apply to the 3.25 acres of parkland not being constructed by the Project, as set forth in the City's General Plan and Lemoore City Municipal Code Title 9, Chapter 7, Article N. The Project's parkland impact fees will be determined by the City of Lemoore. Evidence of the payment of impact fees shall be submitted to the City Community Development Department. | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
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| **Transportation** | | | | |
| **TRA-1:**<br>Prior to issuance of building permit, the Project shall pay its fair share cost percentages and/or construct the recommended improvements as determined by the City. The following are the required improvements:<br>○ Liberty Drive / Hanford-Armona Road<br>▪ Signalize the intersection with protected left-turn phasing in all directions while retaining the existing lane geometrics. | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore | |
| **TRA-2:**<br>Prior to the issuance of construction or building permits, the project developer shall:<br>1. Obtain all necessary encroachment permits for work within the road right-of-way or use of oversized/overweight vehicles that will utilize City-maintained roads, which may require California Highway Patrol or a pilot car escort. Copies of the approved traffic plan and issued permits shall be submitted to the City of Lemoore Community Development Department and Public Works Department-Development Review.<br>2. Prepare and submit a Construction Traffic Control Plan to City of Lemoore Public Works Department-Development Review and the Community Development Department, as appropriate, for approval. The Construction Traffic Control Plan shall be prepared in accordance with both the California Department of Transportation Manual on Uniform Traffic Control Devices and Work Area Traffic Control Handbook and shall include, but not be limited to, the following issues:<br>a. Timing of deliveries of heavy equipment and building materials; | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
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| b. Directing construction traffic with a flag person;<br>c. Placing temporary signing, lighting, and traffic control devices if required, including, but not limited to, appropriate signage along access routes to indicate the presence of heavy vehicles and construction traffic;<br>d. Ensuring access for emergency vehicles to the project site;<br>e. Temporarily closing travel lanes or delaying traffic during materials delivery, transmission line stringing activities, or any other utility connections;<br>f. Maintaining access to adjacent property; and,<br>g. Specifying both construction-related vehicle travel and oversize load haul routes, minimizing construction traffic during the AM and PM peak hour, distributing construction traffic flow across alternative routes to access the project sites, and avoiding residential neighborhoods to the maximum extent feasible. | | | | |
| **TRA-3:**<br>a) Prior to a Subdivision Notice of Completion, the Project shall construct Class I Bikeways along the following:<br>• South side of Street 'S' between Lemoore Avenue and the eastern boundary of the Project.<br>• Street 'G' between Street 'S' and Street 'P'. the Project shall install Class II Bikeways along Street 'S' between Lemoore Avenue and the eastern boundary of the Project and along Mary Drive between Street 'I' and Lacey Boulevard.<br>b) Adjacent to the Project, Class II Bikeways shall be constructed along the following: | Project Applicant | Prior to issuance of occupancy permits | City of Lemoore | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
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| • The frontage along Lemoore Avenue between Lacey Boulevard and Glendale Avenue<br>• The frontage along Lacey Boulevard between Lemoore Avenue the eastern boundary of the Project. | | | | |
| **TRA-4:**<br>Prior to a Subdivision Notice of Completion the Project shall incorporate:<br><br>a) Intersection traffic calming features such as mini-circles at the following intersections:<br>• Beverly Drive and Street 'S',<br>• Street 'G' and Street 'S',<br>• Street 'L' and Street 'S',<br>• Street 'C' and Street 'I',<br>• Street 'D' and Street 'I',<br>• Mary Drive and Street 'I',<br>• Street 'A' and Street 'F'.<br><br>b) Street traffic calming features including on street parking throughout the Project (excluding Street 'S') at the following:<br>• Between Lemoore Avenue and the eastern boundary of the Project,<br>• Along Mary Drive between Lacey Boulevard and Street 'J',<br>• Along median islands on Street 'S' between Lemoore Avenue and Street 'D'<br>• Along Mary Drive between Lacey Boulevard and Street 'I',<br>• Planter strips with street trees throughout the Project. | Project Applicant | Prior to issuance of occupancy permits | City of Lemoore | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
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| **TRA-5:** Prior to issuance of an Occupancy permit for the multi-family residential component, the Project shall implement a minimum of 14 bike parking spaces. | Project Applicant | Prior to issuance of occupancy permits | City of Lemoore | |
| **Tribal Cultural Resources** | | | | |
| **TRI-1:** Prior to any ground disturbance, a surface inspection of the site shall be conducted by a Tribal Monitor. The Tribal Cultural Staff shall monitor the site during grading activities. The Tribal Staff shall provide pre-project-related activities briefings to supervisory personnel and any excavation contractor, which will include information on potential cultural material finds, and any excavation contractor, which will include information on potential cultural material finds, and on the procedures, to be enacted if resources are found. Prior to any ground disturbance, the applicant shall offer the Santa Rosa Rancheria Tachi Yokut Tribe the opportunity to provide a Native American Monitor during ground-disturbing activities. Tribal participation would be dependent upon the availability and interest of the tribe. | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore | |
| **TRI-2:** In the event that historical or archaeological cultural resources are discovered during project-related activities or decommissioning, operations shall stop within 100 feet of the find, and a qualified archeologist shall determine whether the resource requires further study. The qualifies archaeologist shall determine the measures that shall be implemented to protect the discovered resources including, but not limited to, excavation of the finds and evaluation of he finds and evaluation of the finds in accordance with § 15064.5 of the CEQA | Project Applicant | During Construction | City of Lemoore | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
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| Guidelines. Measures may include avoidance, preservation in-place, recordation, additional archaeological resting, and data recovery, among other options. Any previously undiscovered resources found during project-related activities within the project area shall be recorded on appropriate Department of Parks and Recreation forms and evaluated for significance. No further ground disturbance shall occur in the immediate vicinity of the discovery until approved by the qualified archaeologist.<br>The Lead Agency, along with other relevant or tribal officials, shall be contacted upon the discovery of cultural resources to begin coordination on the disposition of the find(s). Treatment of any significant cultural resources shall be undertaken with the approval of the Lead Agency. | | | | |
| **TRI-3:**<br>Upon coordination with the Lead Agency, any archaeological artifacts recovered shall be donated to an appropriate tribal custodian or a qualified scientific institution where they would be afforded applicable cultural resources laws and guidelines. | Project Applicant | During Construction | City of Lemoore | |
| **TRI-4:**<br>If human remains are discovered during project-related activities or operational activities, further excavation or disturbance shall be prohibited pursuant to Section 7050.5 of the California Health and Safety Code. The specific protocol, guidelines, and channels of communication outlined by the Native American Heritage Commission, in accordance with Section 7050.5 of the Health and Safety Code, Section 5097.98 of the Public Resources Code (Chapter 1492, Statutes of 1982, Senate Bill 297), and Senate Bill 447 (Chapter 44, Statutes of 1987) shall be followed. Section 7050.5(c) shall guide the potential | Project Applicant | During Construction | City of Lemoore | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
|---|---|---|---|---|
| Native American involvement, in the event of discovery of human remains, at the direction of the County Coroner. | | | | |
| **Utilities and Service Systems** | | | | |
| **UTIL-1:** Prior to issuance of building permits, the Project proponent shall pay impact fees for its fair share of wastewater (sewer) services. The fee, or equivalent in-lieu, will be determined by the City of Lemoore. Evidence of the payment of impact fees shall be submitted to the City Community Development Department. | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore | |

# Chapter 1

# INTRODUCTION

# 1.0 INTRODUCTION

This Environmental Impact Report (EIR or Draft EIR) has been prepared on behalf of the City of Lemoore (City) in accordance with the California Environmental Quality Act (CEQA). This chapter outlines the purpose of and overall approach to the preparation of the EIR for the proposed Project. The Project applicant is proposing to subdivide and develop approximately 156 acres of vacant land into a 825-unit residential community with a mix of single-family and multi-family housing units. The proposed Project is bounded by W. Lacey Blvd to the north and 18th Avenue to the west. The proposed Project is more fully described in Chapter Two – Project Description.

An EIR responds to the requirements of CEQA as set forth in Sections 15126, 15175, and 15176 of the CEQA Guidelines. The Planning Commission and City Council will use the EIR during the public review process in order to understand the potential environmental implications associated with implementing the Project.

## 1.1 Purpose of EIR

The City of Lemoore, as Lead Agency, determined that the proposed activities constitute a "project" within the definition of CEQA. The preparation of an EIR is required by CEQA prior to approving any project that may have a significant impact on the environment. For the purposes of CEQA, the term "project" refers to the whole of an action, which has the potential for resulting in a direct physical change or a reasonably foreseeable indirect physical change in the environment (CEQA Guidelines Section 15378[a]).

This Draft EIR has been prepared according to CEQA requirements to evaluate the potential environmental impacts associated with the implementation of the proposed Project. The Draft EIR also discusses alternatives to the Project, and proposes mitigation measures that will offset, minimize, or otherwise avoid significant environmental impacts. This Draft EIR has been prepared in accordance with CEQA, California Resources Code Section 21000 et seq.; the Guidelines for the California Environmental Quality Act (California Code of Regulations, Title 14, Chapter 3); and the rules, regulations, and procedures for implementing CEQA as adopted by the City of Lemoore.

An EIR must disclose the expected direct and indirect environmental impacts associated with a project, including impacts that cannot be avoided, growth-inducing effects, impacts found not to

be significant, and significant cumulative impacts, as well as identify mitigation measures and alternatives to the proposed Project that could reduce or avoid its adverse environmental impacts. CEQA requires government agencies to consider and, where feasible, minimize environmental impacts of proposed development.

## 1.2 Type of EIR

The State CEQA Guidelines identify several types of EIRs, each applicable to different project circumstances. This EIR has been prepared as a Project-level EIR pursuant to CEQA Guidelines Section 15161. A Project-level EIR is described in State CEQA Guidelines § 15161 as: "The most common type of EIR (which) examines the environmental impacts of a specific development project. This type of EIR should focus primarily on the changes in the environment that would result from the development project. The EIR shall examine all phases of the project including planning, construction, and operation." The project-level analysis considers the broad environmental effects of a proposed project.

## 1.3 Intended Uses of the EIR

The City of Lemoore, as the Lead Agency, has prepared this EIR to provide the public and responsible and trustee agencies with an objective analysis of the potential environmental impacts resulting from implementation of the proposed Project. The environmental review process enables interested parties to evaluate the proposed project in terms of its environmental consequences, to examine and recommend methods to eliminate or reduce potential adverse impacts, and to consider a reasonable range of alternatives to the project. While CEQA requires that consideration be given to avoiding adverse environmental effects, the lead agency must balance adverse environmental effects against other public objectives, including the economic and social benefits of a project, in determining whether a project should be approved.

This EIR will be used as the primary environmental document to evaluate all subsequent planning and permitting actions associated with the Project. This EIR may also be used by other agencies within the area, including the Local Agency Formation Commission of Kings County (for annexation) and the San Joaquin Valley Air Pollution Control District, which may use this EIR during the permitting process.

## 1.4 Known Responsible and Trustee Agencies

The term "Responsible Agency" includes all public agencies other than the Lead Agency that have discretionary approval power over the project or an aspect of the project (CEQA Guidelines Section 15381). For the purpose of CEQA, a "Trustee" agency has jurisdiction by law over natural resources that are held in trust for the people of the State of California (CEQA Guidelines Section 15386). The Project may require permits and approvals from Trustee and Responsible Agencies, which may include the following:

- Regional (Central Valley) Water Quality Control Board (RWQCB)
- San Joaquin Valley Air Pollution Control District (SJVAPCD)

## 1.5 Environmental Review Process

The review and certification process for the EIR has involved, or will involve, the following general procedural steps:

### Initial Study and Notice of Preparation

The City of Lemoore circulated an Initial Study (IS) and Notice of Preparation (NOP) (referred to collectively as "IS/NOP") of an EIR for the proposed Project from August 20, 2020 through September 21, 2020 to trustee and responsible agencies, the State Clearinghouse (SCH #2020080314), and the public. The IS/NOP analyzed the following CEQA Appendix G topics, and it was determined that no impacts would occur that would require analysis in the draft EIR. No further discussion of these topics is warranted in this document:

- Aesthetics
- Mineral Resources
- Recreation
- Wildfire

Three agency comments on the IS/NOP related to the EIR analysis were presented or submitted during the public review period. The IS/NOP and written comments provided to the City during the 30-day public review period for the IS/NOP are presented in Appendix A. The letters are summarized as follows:

1. **California Department of Conservation – Geologic Energy Management Division:** Provided regulations pertaining to handling of any known oil or gas wells located within the Project boundaries.
2. **California Department of Conservation – Division of Land Resource Protection:** Provided regulations pertaining to conversion of farmland to urban uses.
3. **Pacific Gas and Electric Company:** Provided information and regulations pertaining to gas and electric facilities that would serve the Project.

### Scoping Meeting

Pursuant to Section 15206 of the State CEQA Guidelines, the lead agency is required to conduct at least one scoping meeting for all projects of statewide, regional, or area-wide significance. The scoping meeting is for jurisdictional agencies and interested persons or groups to provide comments regarding (but not limited to) the range of actions, alternatives, mitigation measures, and environmental effects to be analyzed. The City of Lemoore hosted a scoping meeting on September 14, 2020.

### Draft EIR

This document constitutes the Draft EIR. The Draft EIR contains a description of the project, description of the environmental setting, identification of the project's direct and indirect impacts on the environment, and mitigation measures for impacts found to be significant, as well as an analysis of project alternatives, identification of significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. This Draft EIR also identifies issues determined to have no impact or a less than significant impact, and provides detailed analysis of potentially significant and significant impacts. Comments received in response to the IS/NOP were considered in preparing the analysis in this EIR. Upon completion of the Draft EIR, the City of Lemoore will file the Notice of Completion (NOC) with the State Clearinghouse of the Governor's Office of Planning and Research to begin the public review period.

### Public Notice/Public Review

Concurrent with the NOC, the City of Lemoore will provide a public notice of availability for the Draft EIR, and invite comment from the general public, agencies, organizations, and other interested parties. Consistent with CEQA requirements, the review period for this Draft EIR is forty-five (45) days. Public comment on the Draft EIR will be accepted in written form. All comments or questions regarding the Draft EIR should be addressed to:

Nathan Olson, City Manager
City of Lemoore
711 W. Cinnamon Drive
Lemoore, CA 93245

## Responses to Comments/Final EIR

Following the public review period, a Final EIR will be prepared. The Final EIR will respond to written comments received during the public review period and to oral comments received during such review period.

## Entitlement Procedures / Certification of the EIR / Project Consideration

The City of Lemoore is Lead Agency for the proposed Project, pursuant to the California Environmental Quality Act (CEQA). The Project will require the following approvals and/or entitlements from the City of Lemoore:

- Annex approximately 156 acres from Kings County into the City of Lemoore
- Approval of a General Plan Amendment
- Approval of a Zone Change
- Adoption of the Lacey Ranch Master Plan through a Planned Unit Development
- Approval of Tentative Tract Map(s)
- Approval of Major Site Plan Review
- Certification of the Project EIR
- Certification of the Final EIR
- Adoption of the Mitigation Monitoring and Reporting Program
- Adoption of 15091 and 15093 Findings and Statement of Overriding Considerations
- Issuance of Grading / Building Permits
- Approval of the Project Water Supply Assessment

The City of Lemoore will review and consider the Final EIR. If the City finds that the Final EIR is "adequate and complete," the City Council may certify the Final EIR in accordance with CEQA. As set forth by CEQA Guidelines Section 15151, the standards of adequacy require an EIR to provide a sufficient degree of analysis to allow decisions to be made regarding the proposed Project that intelligently take account of environmental consequences.

Upon review and consideration of the Final EIR, the City Council may take action to approve, revise, or reject the project. A decision to approve the proposed Project, for which this EIR identifies significant environmental effects, must be accompanied by written findings in accordance with State CEQA Guidelines Sections 15091 and 15093. A Mitigation Monitoring and Reporting Program (MMRP) would also be adopted in accordance with Public Resources Code Section 21081.6(a) and CEQA Guidelines Section 15097 for mitigation measures that have been incorporated into or imposed upon the Project to reduce or avoid significant effects on the environment. The MMRP will be designed to ensure that these measures are carried out during project implementation in a manner that is consistent with the EIR.

## 1.6 Organization and Scope

Sections 15122 through 15132 of the State CEQA Guidelines identify the content requirements for Draft and Final EIRs. An EIR must include a description of the environmental setting, an environmental impact analysis, mitigation measures, alternatives, significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts. Discussion of the environmental issues addressed in the Draft EIR was established through review of environmental and planning documentation developed for the project, environmental and planning documentation prepared for recent projects located within the City of Lemoore, and responses to the IS/NOP. This Draft EIR is organized in the following manner:

### Executive Summary

The Executive Summary summarizes the characteristics of the proposed Project, known areas of controversy and issues to be resolved, and provides a concise summary matrix of the project's environmental impacts and possible mitigation measures. This chapter also identifies alternatives that reduce or avoid at least one significant environmental effect of the proposed Project.

### Chapter 1.0 – Introduction

Chapter 1.0 briefly describes the proposed Project, the purpose of the environmental evaluation, identifies the lead, trustee, and responsible agencies, summarizes the process associated with preparation and certification of an EIR, identifies the scope and organization of the Draft EIR, and summarizes comments received in response to the IS/NOP.

## Chapter 2.0 – Project Description

Chapter 2.0 provides a detailed description of the proposed Project, including the location, intended objectives, background information, the physical and technical characteristics, including the decisions subject to CEQA, subsequent entitlement activities, and a list of related agency action requirements.

## Chapter 3.0 – Environmental Setting, Impacts and Mitigation Measures

Chapter 3.0 contains an analysis of environmental topic areas as identified below. Each subchapter addressing a topical area is organized as follows:

**Environmental Setting.** A description of the existing environment as it pertains to the topical area.

**Regulatory Setting.** A description of the regulatory environment that may be applicable to the project.

**Impacts and Mitigation Measures**. Identification of the thresholds of significance by which impacts are determined, a description of project-related impacts associated with the environmental topic, identification of appropriate mitigation measures, and a conclusion as to the significance of each impact.

The following environmental topics are addressed in this Draft EIR:

- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Population and Housing

- Public Services
- Transportation and Traffic
- Tribal Cultural Resources
- Utilities and Services

## Chapter 4.0 – Cumulative Impacts

Chapter 4.0 discusses potential cumulative impacts resulting from project implementation. Cumulative impacts can result from the proposed Project alone, or together with other projects. A cumulative impact of concern under CEQA occurs when the net result of combined individual impacts compounds or increase other overall environmental impacts.

## Chapter 5.0 – Project Alternatives

Chapter 5.0 provides a comparative analysis between the merits of the proposed Project and the selected alternatives. State CEQA Guidelines Section 15126.6 requires that an EIR describe a range of reasonable alternatives to the project, which could feasibly attain the basic objectives of the project and avoid and/or lessen any significant environmental effects of the project.

## Chapter 6.0 – Other CEQA-Required Topics

Chapter 6.0 evaluates and describes the following CEQA required topics: growth-inducing effects, significant and irreversible effects, significant and unavoidable impacts, substantial adverse effects on protected fish, wildlife, and plant species, substantial adverse effects on human beings, and effects not found to be significant.

## Chapter 7.0 – Report Preparers

Chapter 7.0 lists all authors and agencies that assisted in the preparation of the Draft EIR, by name, title, and company or agency affiliation.

## Appendices

This section includes the IS/NOP and responses to the IS/NOP in addition to biological, water, air quality/greenhouse gases, noise and traffic technical studies.

# Chapter 2

# PROJECT DESCRIPTION

# Project Description

## 2.1 Project Location

The proposed Project is located on approximately 156-acres immediately north of the City of Lemoore in Kings County and is bounded by W. Lacey Blvd to the north and 18th Avenue to the west. The Project is on assessor parcel number 021-030-057-000. See Figure 1 – Regional Location, Figure 2 – Vicinity Map and Figure 3 – Site Aerial. The site lies within a portion of the NW quarter of Section 35, Township 18 South, Range 20 East, Mount Diablo Base and Meridian.

## 2.2 Surrounding Land Use

The proposed Project site is located in an area that is dominated by farmland / agricultural operations and scattered rural residential housing to the north, east and west, and residential development to the south. The site is partially designated by the City of Lemoore General Plan for future residential uses and is currently zoned as Limited Agricultural-10 District (AL-10) by Kings County. Approximately one-third of the site (the southern one-third) is within the City's Sphere of Influence (SOI) while the remaining two-thirds are currently outside the SOI. The entire site is proposed for annexation into the City limits of Lemoore. As of Spring 2020, the land is being farmed for alfalfa. Table 2-1 shows land uses and zoning designations of adjacent parcels surrounding the site.

**Table 2-1: Surrounding Land Use and Zoning**

| Location | Existing Land Use | Current Zoning Classification |
|---|---|---|
| **North** | Agriculture | AL-10 (Limited Agricultural-10 District) – County |
| **South** | Residential | Low Density Residential (RLD) - City |
| **West** | Agriculture/City Water tank and treatment facility | AL-10 (Limited Agricultural-10 District) – County / PR (Parks and Recreation/Ponding Basin) - City |
| **East** | Agriculture | AL-10 (Limited Agricultural-10 District) - County |

## 2.3 Project Description

This EIR examines the potential environmental impacts of a proposed Project that consists of the following:

- Annexation of approximately 156 acres from Kings County into the City of Lemoore
- Approval of a General Plan Amendment
- Approval of a Prezoning
- Adoption of the Lacey Ranch Master Plan through a Planned Unit Development
- Approval of Tentative Tract Map(s)
- Approval of Major Site Plan Review
- Certification of the Project EIR
- Certification of the Final EIR
- Adoption of the Mitigation Monitoring and Reporting Program
- Adoption of 15091 and 15093 Findings and Statement of Overriding Considerations
- Issuance of Grading / Building Permits
- Approval of the Project Water Supply Assessment

Within the Lacey Ranch Area Master Plan, the Project applicant is proposing to subdivide and develop approximately 156 acres of land into a planned residential community with a mix of single-family and multi-family housing units. The Project will be constructed in four phases, as is outlined below. The exact numbers of each housing type may vary slightly, depending on final density, but there will be a maximum of 825 housing units in total (see Figure 4). Specific housing types include:

- ±164 compact lots with an average lot size of 4,500 square feet
- ±310 medium lots with an average lot size of 6,500 square feet
- ±73 estate lots with an average lot size of 9,500 square feet
- ±145 multifamily units at 20 units per acre
- ±59 multifamily units at 12 units per acre

Table 2-2 depicts the proposed land use designations and zone districts of the proposed Project.

**Table 2-2: Proposed Land Use and Zoning Designations**

| Proposed Land Use | Proposed Land Use Designation | Proposed Zone District |
|---|---|---|
| Single Family lots | Low Density Residential | RLD – Low Density Residential |
| 12 unit per acre multifamily | Medium Density Residential | RMD – Medium Density Residential |
| 20 unit per acre multifamily | High Density Residential | RHD – High Density Residential |
| Parks | Parks/Recreation | PR – Parks/Recreation |
| Storm drainage basin | Greenway/Detention Basin | PR – Parks/Recreation |

**Figure 1 - Regional Location**

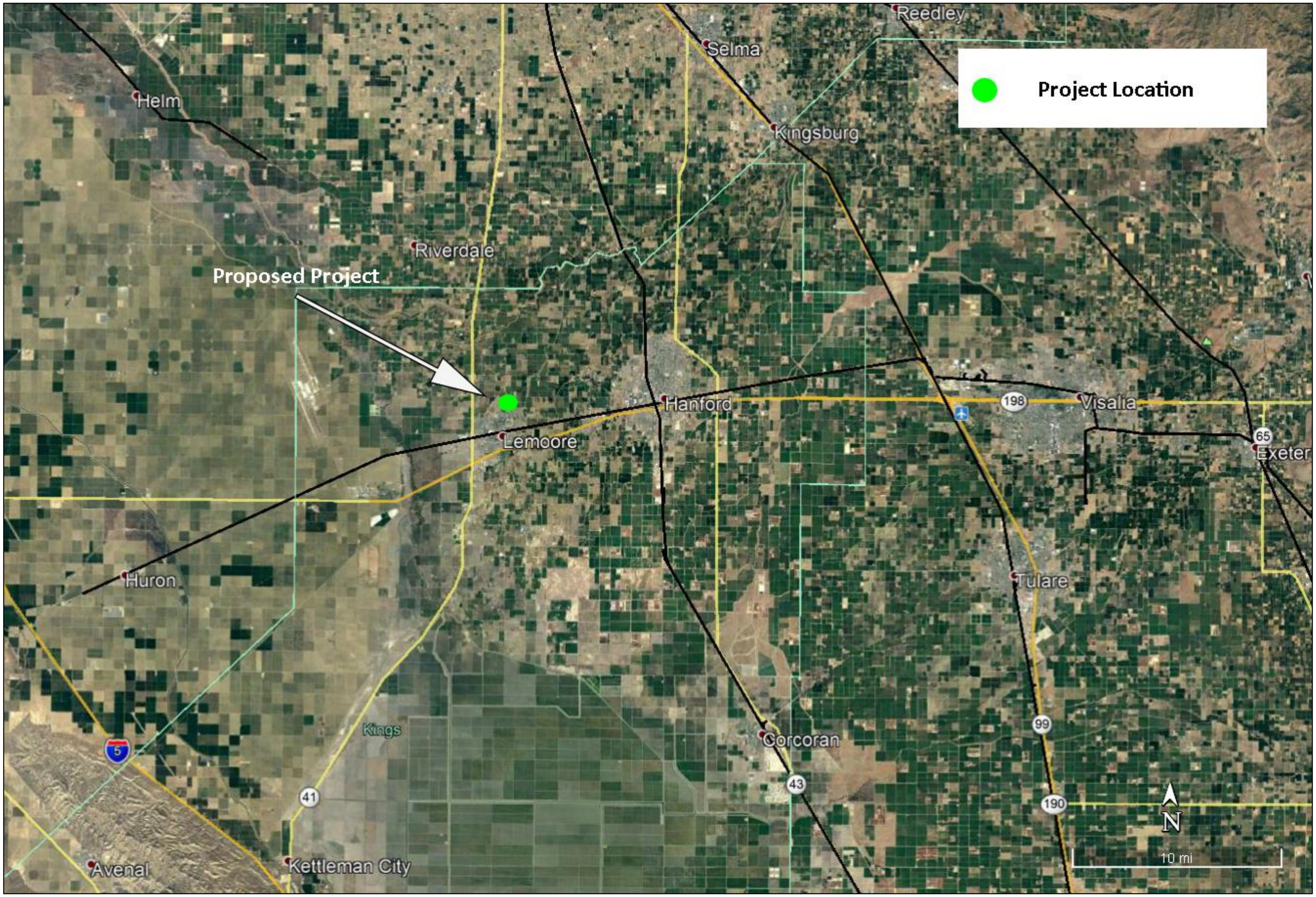


**Figure 2 - Project Vicinity**

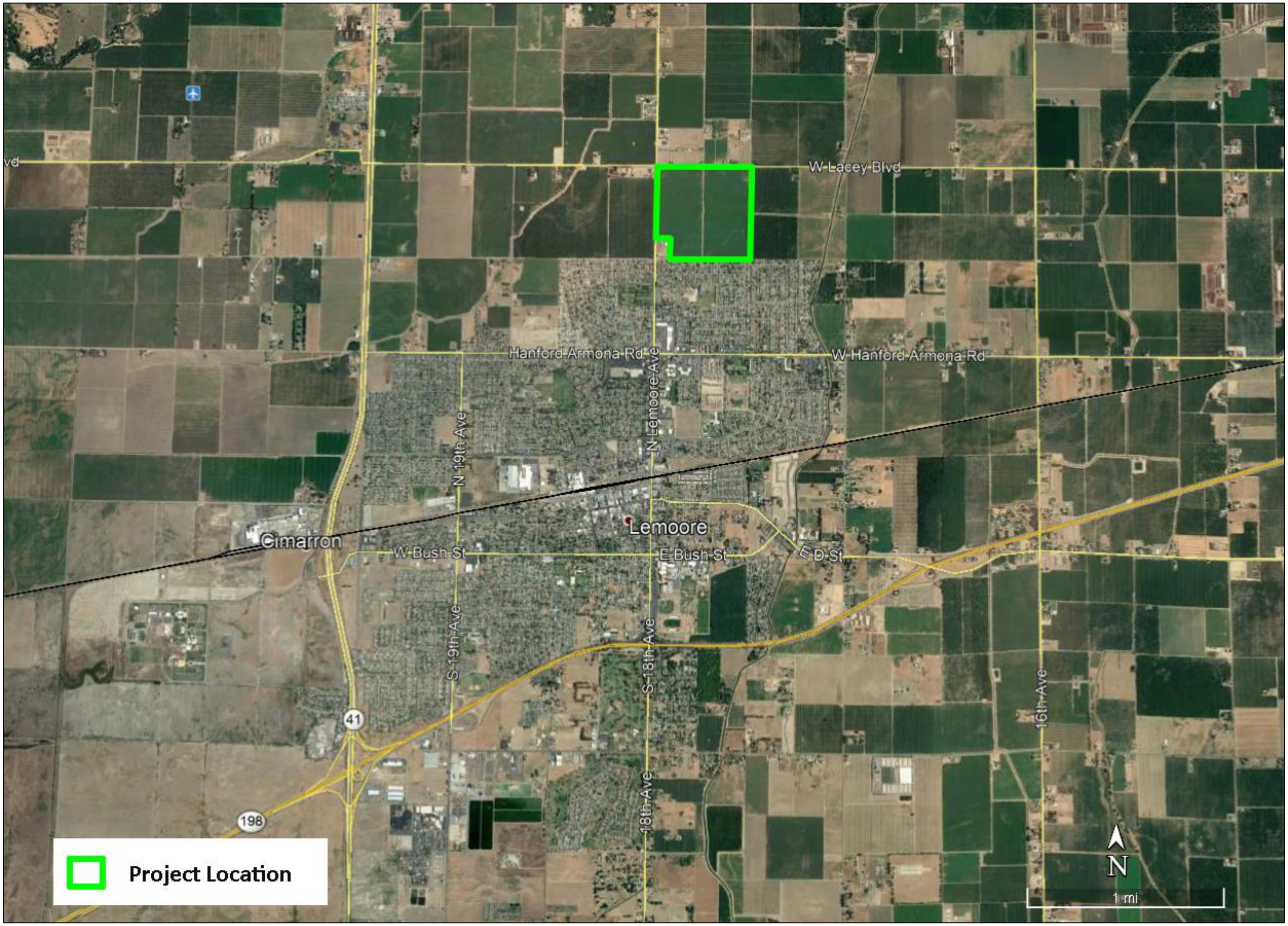
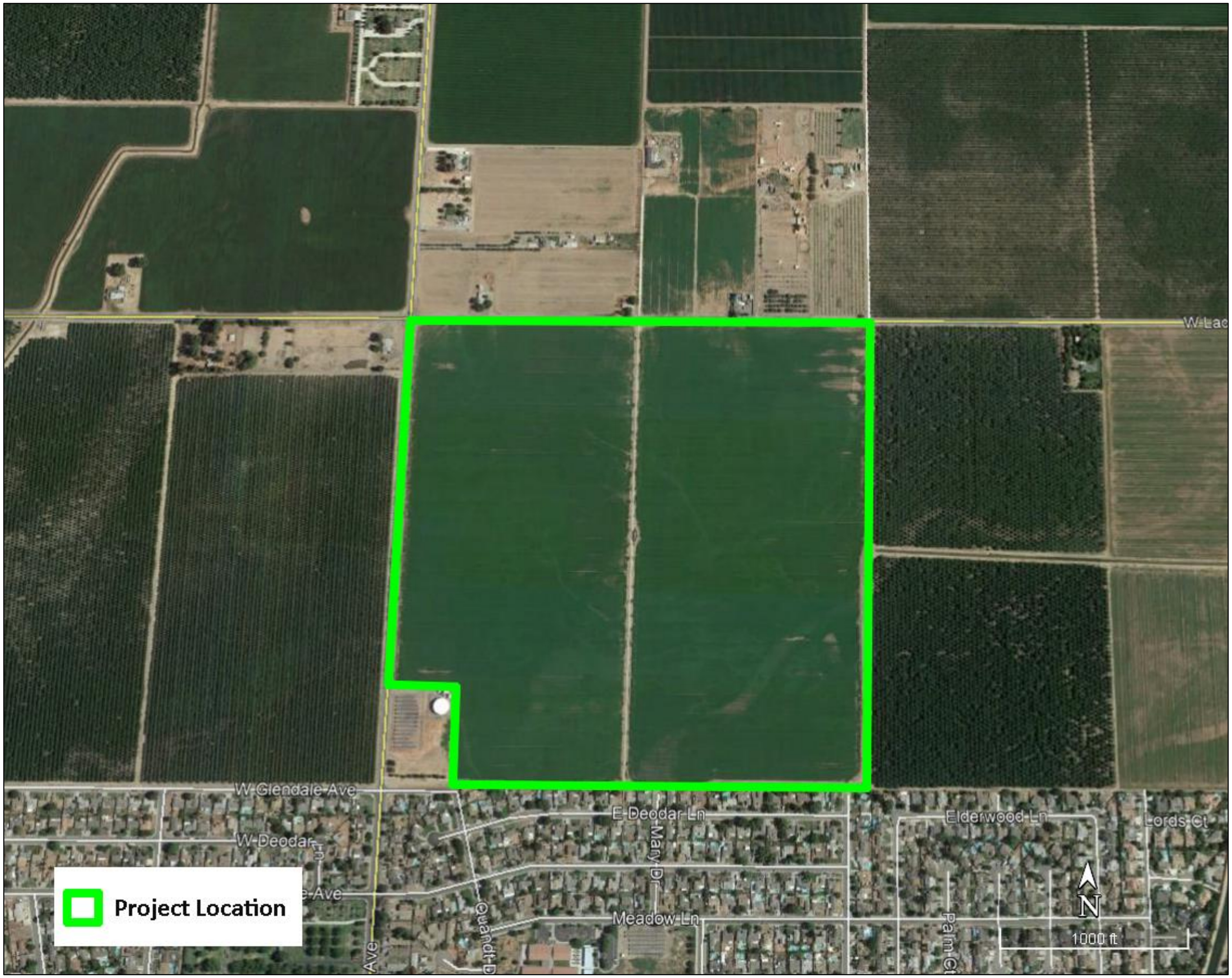


**Figure 3 - Site Aerial**



*Parks and Open Space*

The Project includes a total of four parks for a total of 7.9 acres and 1.64 acres of trail area, as depicted on Figure 4. The 1.64 acres of trail area will be designated and zoned consistent with the designations and zoning of their adjacent parcels.

*Site Circulation and Access*

The site has been designed with seven points of ingress and egress. One of these points connects at W. Lacey Blvd along the northern edge of the Project; three access points connect at 18$^{th}$ Avenue on the western edge; two access points are along the southern edge; and one access point is along the eastern edge. The Project will be responsible for construction of internal roadways as well as for potential improvements to surrounding roadways to accommodate the Project.

*Infrastructure*

The Project includes the construction of a 4.39-acre storm drain basin and will require connection to various City-operated systems such as for sewer, water and storm drain facilities. The Project will be responsible for construction of connection points to the City's existing infrastructure. The Project also includes improvements and landscaping along the frontage roads and within the site itself.

The Project will require a 50-foot easement for irrigation water to Lemoore Canal & Irrigation District Co. as the above-ground canal along a portion of the western and southern boundary will be abandoned and relocated into an underground pipe through the Project site.

*Phasing / Construction Schedule*

Proposed Project construction will require site preparation activities such as demolition to remove the existing alfalfa crop and site grading activities. Construction is expected to occur over 16 years as determined by market demands and will be constructed over four phases, broken down as follows:

- Phase 1 – 125 single family lots and 90 multifamily lots
- Phase 2 – 125 single family lots and 100 multifamily lots
- Phase 3 – Dependent on market conditions
- Phase 4 – Dependent on market conditions

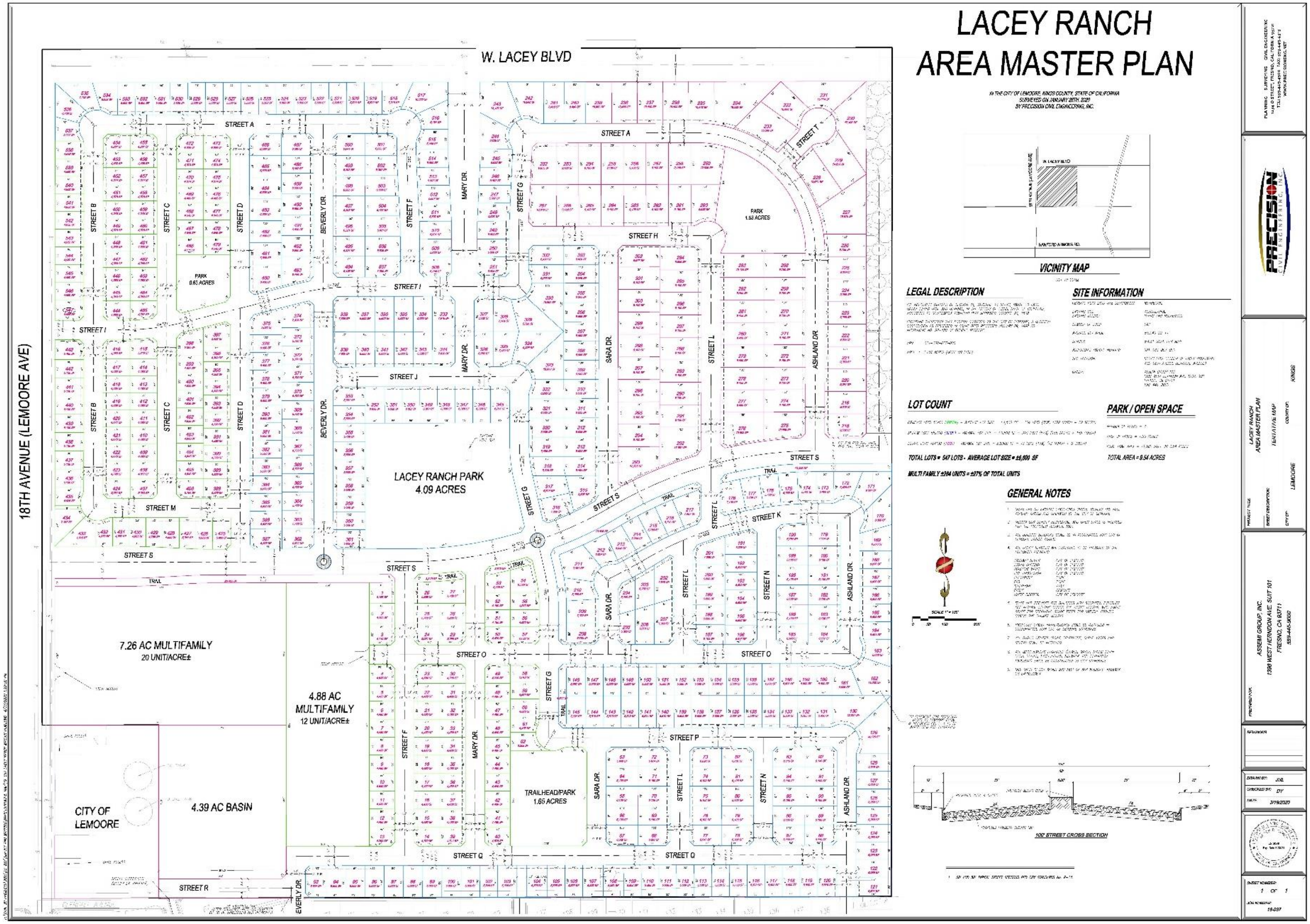
It is anticipated that the Project would begin development in 2022.

## 2.4 Project Objectives

In accordance with CEQA Guidelines Section 15124(b), the following are the City of Lemoore's Project objectives:

- To provide a variety of housing opportunities with a range of densities, styles, sizes and values that will be designed to satisfy existing and future demand for quality housing in the area.
- To provide a sense of community and walkability within the development through the use of street patterns, parks/trails, landscaping and other project amenities.
- To provide a residential development that is compatible with surrounding land uses and is near major services.
- To provide a residential development that assists the City in meeting its General Plan and Housing Element requirements and objectives.

**Figure 4 - Site Plan**



## 2.5 Other Required Approvals

*City of Lemoore*

The City of Lemoore is Lead Agency for the proposed Project, pursuant to the California Environmental Quality Act (CEQA). The Project will require the following approvals and/or entitlements from the City of Lemoore:

- Formal Request for Sphere of Influence Amendment
- Initiation of annexation from Kings County into the City of Lemoore
- General Plan Amendment
- Prezoning
- Adopt the Lacey Ranch Master Plan through a Planned Unit Development
- Approval of Tentative Tract Map(s)
- Approval of Major Site Plan Review
- Certification of the Project EIR
- Certification of Final Environmental Impact Report
- Adoption of Mitigation Monitoring and Reporting Program
- Adoption of 15091 and 15093 Findings and Statement of Overriding Considerations
- Grading / Building Permits
- Approval of the Project Water Supply Assessment

*Other Public Agencies*

The Project will require various permits and/or entitlements from regulatory agencies. These may include, but not be limited to the following:

- LAFCO of Kings County – approval of annexation and Sphere of Influence Amendment
- San Joaquin Valley Air Pollution Control District – approval of Rule 9510 AIA Application
- Regional Water Quality Control Board- Storm Water Pollution Prevention Plan

# Chapter 3

# ENVIRONMENTAL SETTING, IMPACTS & MITIGATION

# 3.1 Agricultural Resources

This section of the DEIR identifies potential impacts of the proposed Project pertaining to Agricultural Resources. One NOP comment letter pertaining to this topic was received from Monique Wilber of the California Department of Conservation (DOC). The letter provided recommendations pertaining to the evaluation of the loss of farmland including the type/amount of land being converted, impacts to current/future farming, proposed mitigation measures and compatibility with surrounding lands utilizing the California Agricultural Land Evaluation and Site Assessment Model (LESA)[1], which the California Department of Conservation developed to provide lead agencies with a methodology to ensure that significant effects on the environment of agricultural land conversions are quantitatively and consistently considered in the environmental review process. An Agricultural Conversion Study was prepared for the Project and is the basis for analysis for the discussion herein Appendix B.

## Environmental Setting

As described in Section 2.1, the Project site is located immediately north of the City of Lemoore in Kings County, in an area dominated by rural agricultural land and homesteads, and the residential units associated with the City of Lemoore immediately to the south. The site is partially designated by the City of Lemoore General Plan for future residential uses and is currently zoned as Limited Agricultural-10 District (AL-10) by Kings County. Approximately one-third of the site (the southern one-third) is within the City's Sphere of Influence (SOI) while the remaining two-thirds are currently outside the SOI. The entire site is within the adopted Urban Development Boundary and proposed for annexation into the City limits of Lemoore.

Climate

The proposed Project site is located in the southern Central Valley of California; this area has the rainy winters and dry summers that are characteristic of a Mediterranean climate. The Central Valley has greater temperature extremes than the coastal areas because it is less affected by the moderating influence of the Pacific Ocean.

The Western Regional Climate Center (WRCC) provides climate data derived from stationary weather stations throughout the western United States. WRCC has developed a data set for monthly climate for the Project area (1899 to 2016); this data set is based on weather readings taken from the Hanford 043747 Station, the nearest weather station to the proposed Project site.

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[1] California Department of Conservation, Division of Land Resource Protection. Accessible at http://www.conservation.ca.gov/dlrp/Pages/qh_lesa.aspx. Accessed September 2018

The majority of rainfall occurs from November through March with an average annual rainfall of approximately eight inches per year. The monthly average temperature maximum was 97.8°F in July and the monthly average minimum was 35.2°F in January.[2]

Kings County Agricultural Production

Agricultural products are one of Kings County's most important resources. The *2019 Crop Report* stated "The gross value of all agricultural crops and products produced during 2019 in Kings County was $2,187,693,000. This represents a decrease of $92,982,000 (4.1%) from the 2018 value.[3]

Fruit and Nut Crops had the largest increase in value at $43,645,000 (7.3%) due primarily to an increase in production and price of almonds. Seed Crops increased $1,906,000 (16.2%) due to an increase in acreage.[4]

Livestock and Poultry Products had the largest decrease in value at $72,682,000 (10.7%) due to a decrease in milk production. Vegetable crops decreased $34,465 (16%) due largely to a decrease in processing tomato acreage and production. Livestock and Poultry decreased $19,891,000 (7.1% due to less cattle, calves and poultry sold, as well as lower poultry prices. Field crops decreased $10,510,000 due primarily to lower cotton prices. Apiary products decreased $985,000 (6.6%) due largely to less acreage pollinated.[5]

Project site Crops and Yields

According to Jeff Roberts of Assemi Group, Inc., approximately 155 acres of alfalfa hay has grown on the proposed Project site for the past five years and one acre is occupied by dirt roads.

Alfalfa hay was ranked number ten among the top ten commodities grown in Kings County for the year 2019 with a value of $45,276,000. The Kings County 2019 Crop Report indicates an acre of alfalfa hay produced a yield of 8.59 tons with a crop value of $205 per ton. Alfalfa crop yields and total value are provided in Table 3.1-1.

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[2] Western Regional Climate Center. Period of Record Monthly Climate Summary, Hanford, California. https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca3747. Accessed January 2021.
[3] Kings County Department of Agriculture 2019 Crop Report. Cover Story by Jimmy Hook, Agricultural Commissioner. https://www.countyofkings.com/home/showpublisheddocument/24293/637345497607270000. Accessed December 2020.
[4] Ibid.
[5] Ibid.

**Table 3.1-1**
**Annual Project Site Crop Yield[6]**

| Crop | Bearing Acreage | Per Acre Yield/Ton | Total Tons | Unit Value per Ton ($) | Total Value ($) |
|---|---|---|---|---|---|
| Alfalfa hay | 155 | 8.59 | 1,331.5 | 205 | 272,957.50 |

<u>Kings County Priority Ranking</u>

Kings County has developed an "Agricultural Priority" map which ranks the importance of preserving land as: Very Low; Low; Low-Medium; Medium; Medium-High; and Highest. These 'priorities' were developed based upon the following: Farmland Designation, Land Use Designation, availability of water, soil type and quality, proximal land uses, project urban growth factors, and others. The proposed Project site has been assigned a Low priority.[7]

<u>Project Site</u>

According to the FMMP[8], the proposed Project site is mapped as containing approximately 154 acres of Prime Farmland and one acre of Unique Farmland. The proposed Project site is currently under a Williamson Act Contract.

The Project site does not contain any land defined as forest land (as defined by Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or land zoned Timberland Production (as defined by Government Code section 51104(g)).

[6] Agricultural Land Conversion Analysis for the Lacey Ranch Area Master Plan Project. Prepared by Crawford & Bowen Planning, Inc. June 2021. See Appendix B. Page 15.
[7] Kings County Agricultural Land Conversion Study prepared by Michael Brandman Associates in September, 2008. https://www.countyofkings.com/home/showpublisheddocument?id=3142. Accessed May 2021. Exhibit 11.
[8] California Department of Conservation. California Important Farmland Finder. https://maps.conservation.ca.gov/DLRP/CIFF/. Accessed December 2020.

## Regulatory Setting

Federal Regulations

***Farmland Protection Policy Act (7 U.S.C Section 4201)***

The purpose of the Farmland Protection Policy Act (FPPA) is to minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses. It additionally directs Federal programs to be compatible with State and local policies for the protection of farmlands. Congress passed the Agriculture and Food Act of 1981 (Public Law 97–98) containing the FPPA—Subtitle I of Title XV, Sections 1539–1549. The final rules and regulations were published in the Federal Register on June 17, 1994.

The FPPA is intended to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures that, to the extent possible, Federal programs are administered to be compatible with State, local units of government, and private programs and policies to protect farmland. Federal agencies are required to develop and review their policies and procedures to implement the FPPA every two years. The FPPA does not authorize the Federal Government to regulate the use of private or non-Federal land or, in any way, affect the property rights of owners.

For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of Statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forestland, pastureland, cropland, or other land, but not water or urban built-up land.

Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a Federal agency or with assistance from a Federal agency.[9]

State

*California Department of Conservation(DOC), Division of Land Resource Protection*

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[9] USDA Natural Resources Conservation Service. Farmland Protection Policy Act. http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/landuse/fppa/. Accessed August 2020.

The Division of Land Resource Protection (DLRP), within the Department of Conservation (DOC), serves as the State's leader in conserving California's irreplaceable agricultural lands. DLRP provides information, and technical and financial assistance to partners to protect California's agricultural land and promote sustainable growth.

The DOC applies the Natural Resources Conservation Service (NRCS) soil classifications to identify agricultural lands, and these agricultural designations are used in planning for the present and future of California's agricultural land resources. The DOC has a minimum mapping unit of 10 acres, with parcels that are smaller than 10 acres being adsorbed into the surrounding classifications.

*Farmland Mapping and Monitoring Program*

The DOC established the Farmland Mapping and Monitoring Program (FMMP) in 1982. The FMMP is a non-regulatory program and provides a consistent and impartial analysis of agricultural land use changes throughout California. The FMMP produces amps and statistical date used for analyzing impacts on California's agricultural resources. Agricultural land is rated according to soil quality and irrigation status. The best quality land is called Prime Farmland with additional categories, including Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance.

The list below provides a description of all the categories mapped by the FMMP[10].

- **Prime Farmland**. Farmland that has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

- **Farmland of Statewide Importance**. Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

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[10] California Department of Conservation Division of Land Resource Protection. Farmland Mapping and Monitoring Program. Important Farmland Categories. https://www.conservation.ca.gov/dlrp/fmmp/Pages/Important-Farmland-Categories.aspx#:~:text=Important%20Farmland%20Categories.%201%20Rural%20Residential%20Land%20%28R%29,an%20extent%20of%20at%20least%2040%20acres.%20. Accessed August 2020.

- **Unique Farmland**. Farmland of lesser quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated, but may include nonirrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.

- **Farmland of Local Importance**. Lands that produce dryland grains (barley and wheat); lands that have physical characteristics that would qualify for "Prime" or "Statewide Important" farmlands except for the lack of irrigation water; and lands that currently support confined livestock, poultry, and/or aquaculture operations.

- **Grazing Land**. Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities. The minimum mapping unit for Grazing Land is 40 acres.

- **Urban and Built-up Land**. Land occupied by structures with a building density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel. This land is used for residential, industrial, commercial, institutional, public administrative purposes, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

- **Other Land**. Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines and borrow pits; and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

*California Land Conservation (Williamson Act)*

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, is promulgated in California Government Code Sections 51200–51297.4. The Williamson Act enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space uses. In return, the landowners receive property tax assessment based on farming and open space uses, as opposed to full market value, thus resulting in a lower tax burden. Private land within locally designated agricultural preserve areas is eligible for enrollment under Williamson Act contracts. However, an agricultural preserve must consist of no less than 100 acres. In order to meet this requirement, two or more parcels may be combined if they are contiguous, or if they are in common ownership.

The Williamson Act program is administered by the DOC, in conjunction with local governments, which administer the individual contract arrangements with landowners. The landowner commits the parcel to a 10-year period wherein no conversion out of agricultural use is permitted. Each year the contract automatically renews unless a notice of non-renewal or cancellation is filed. In return, the land is taxed at a rate based on the actual use of the land for agricultural purposes, as opposed to its unrestricted market value. An application for immediate cancellation can also be requested by the landowner, provided that the proposed immediate cancellation application is consistent with the cancellation criteria stated in the California Land Conservation Act and those adopted by the affected county or city. Non-renewal or immediate cancellation does not change the zoning of the property. Participation in the Williamson Act program is dependent on county adoption and implementation of the program and is voluntary for landowners.

As defined by the Williamson Act, prime agricultural land includes: (1) Class I and II soils as classified by the NRCS; (2) land that qualifies for rating 80 through 100 in the Storie Index Rating by the University of California, Division of Agricultural Sciences; (3) land that supports livestock used for the production of food and fiber and with at least one animal unit per acre; 4) land planted with fruit or nut-bearing crops that yield not less than $200 per acre annually during commercial bearing periods; or (5) land that has returned from the production of unprocessed agricultural plant products and annual gross value of not less than $200 per acre for three of the previous five years.[11]

The Williamson Act states that a board or council by resolution shall adopt rules governing the administration of agricultural preserves. The rules of each agricultural preserve specify the uses allowed. Generally, any commercial agricultural use will be permitted within any agricultural preserve. In addition, local governments may identify compatible uses permitted with a use permit. California Government Code Section 51238 states that, unless otherwise decided by a local board or council, the erection, construction, alteration, or maintenance of electric and communication facilities, as well as other facilities, are determined to be compatible uses within any agricultural preserve. Section 51238 also states that a board of supervisors may impose conditions on lands or land uses to be placed within preserves to permit and encourage compatible uses in conformity with Section 51238.1. Further, California Government Code Section 51238.1 allows a board or council to allow as compatible any use that without conditions or mitigations

[11] Government Code, Section 51201(c)(1)-(5)).

would otherwise be considered incompatible. However, this may occur only if that use meets the following conditions:

- The use will not significantly compromise the long-term productive agricultural capability of the subject contracted parcel or parcels on other contracted lands in agricultural preserves.
- The use will not significantly displace or impair current or reasonably foreseeable agricultural operations on the subject contracted parcel or parcels or on other contracted lands in agricultural preserves. Uses that significantly displace agricultural operations on the subject contracted parcel or parcels may be deemed compatible if they relate directly to the production of commercial agricultural products on the subject contracted parcel or parcels or neighboring lands, including activities such as harvesting, processing, or shipping.
- The use will not result in the significant removal of adjacent contracted land from agricultural or open-space use.

Section 51243.5 states that a city may exercise its option to not succeed to the rights, duties, and powers of the county under the contract if each of the following had occurred prior to January 1, 1991:

(1) The land being annexed was within one mile of the city's boundary when the contract was executed.

(2) The city had filed with the local agency formation commission a resolution protesting the execution of the contract.

(3) The local agency formation commission had held a hearing to consider the city's protest to the contract.

(4) The local agency formation commission had found that the contract would be inconsistent with the publicly desirable future use and control of the land.

(5) The local agency formation commission had approved the city's protest.

*Farmland Security Zone Act*

The Farmland Security Zone Act (FSZA) is similar to the Williamson Act and was passed by the California State Legislature in 1999 to ensure that long-term farmland preservation is part of public policy. Farmland Security Zone Act contracts are sometimes referred to as "Super Williamson Act Contracts." Under the provisions of this act, a landowner already under a

Williamson Act contract can apply for Farmland Security Zone status by entering into a contract with the county. Farmland Security Zone classification automatically renews each year for an additional 20 years. In return for a further 35 percent reduction in the taxable value of land and growing improvements (in addition to Williamson Act tax benefits), the owner of the property promises not to develop the property into nonagricultural uses. FSZA contracts may be canceled, but only upon a finding that cancellation would both serve the purposes of the Williamson Act and be in the public interest (California Government Code Section 51297).

*Public Resources Code Section 21060.1*

The Public Resource Code (PRC) Section 21060.1 defines agricultural land for the purposes of assessing environmental impacts using the FMMP. The FMMP was established in 1982 to assess the location, quality, and quantity of agricultural lands and the conversion of these lands. The FMMP provides analysis of agricultural land use and land use changes throughout California.

## Local Regulations

*2030 City of Lemoore General Plan*

The 2030 Lemoore General Plan (General Plan) has policies that apply to projects within the City of Lemoore that serve to protect farmland. General Plan Implementing Policies are listed below.

PU-I-10 Requires that developers of agricultural land to be annexed to the City offer the water rights associated with this land to the City.

COS-I-1 Protect lands designated for Agricultural/Rural/Conservation uses with appropriate zoning consistent with the General Plan.

COS-I-2 Identify a secure funding mechanism for the purchase of conservation easements to support farmland preservation and a green space buffer on County land surrounding the Lemoore Planning Area, with particular emphasis on land east of the City.

*There are several ways to obtain funding for farmland conservation easements, including but not limited to, development impact fees, transfers of development rights (TDRs), tax allocations/appropriations, grants, donations or bonds. Each tool has strength and weaknesses and the options must be evaluated to choose the best one for Lemoore. Implementation will necessitate cooperation with the County, usually in the form of a*

*Memorandum of Understanding (MOU), and would also benefit from guidance through applicable land trust organizations, such as the American Farmland Trust or the California Council of Land Trusts.*

COS-I-3 Work with the County to evaluate the need for and feasibility of creating a County Farmland Trust or Open Space District to negotiate open space transactions, hold easements, pursue local open space and farmland preservation policies.

*A land trust or open space district would be voter-established entity with authority hold and manage lands for farmland preservation and conservation purposes. Donation of easements to a land trust or open space district may validate easements for tax purposes.*

COS-I-9 Require developers to inform subsequent buyers of potential continued agricultural production and the lawful use of agricultural chemicals, including pesticides and fertilizers adjacent to the new development site.

*A "Right to Farm" acknowledgement will be required of all purchasers of lots adjacent to farmland.*

## Thresholds of Significance

The thresholds of significance for this section are established by the CEQA Checklist Item. Would the project:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?
- Conflict with existing zoning for agricultural use, or a Williamson Act contract?
- Conflict with existing zoning for, or cause rezoning of, forest land as defined in Public Resources Code section 12220(g)), timberland as defined by Public Resources Code section 4526, or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?
- Result in the loss of forest land or conversion of forest land to non-forest use?
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non agricultural use or conversion of forest land to non-forest use?

## Impacts and Mitigation Measures

**Impact 3.1-1:** *Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?*

**Significant and Unavoidable.** According to the FMMP,[12] the 155-acre proposed Project site is classified as approximately 154 acres of Prime Farmland and one acre of Unique Farmland. The site is partially designated by the City of Lemoore General Plan for future residential uses and is currently zoned as Limited Agricultural-10 District (AL-10) by Kings County. Approximately one-third of the site (the southerly one-third) is within the City's Sphere of Influence (SOI) while the remaining northern two-thirds are currently outside the SOI and outside the City's Planning Boundary. As the northern two thirds of the proposed Project site was not included in the Planning Area of the 2030 Lemoore General Plan, this same area of the site was not included in the agricultural conversion analysis of the 2030 Lemoore General Plan EIR.

The City has evaluated the Project's farmland conversion impacts utilizing the California Agricultural Land Evaluation and Site Assessment Model (LESA)[13], which the California Department of Conservation developed to provide lead agencies with a methodology to ensure that significant effects on the environment of agricultural land conversions are quantitatively and consistently considered in the environmental review process. (See Public Resources Code §21095.)

The LESA is composed of six different factors, which are divided into two sets: Land Evaluation (LE) and Site Assessment (SA) factors. Two LE factors (Land Capability Classification Rating and Storie Index Rating) are based upon measures of soil resources quality and intended to measure the inherent, soil-based qualities of land as they relate to agricultural suitability. Four SA factors (Project Size Rating, Water Resource Availability Rating, Surrounding Agricultural Lands Rating, and Surrounding Protected Resource Lands Rating) are intended to measure social, economic, and geographic attributes that also contribute to the overall value of agricultural land.

The two sets of factors are evenly weighted, meaning the two LE factors and four SA factors are of equal importance; however, for a given project, each of these six factors is separately rated in

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[12] California Department of Conservation. Farmland Mapping and Monitoring Program. Kings County. https://maps.conservation.ca.gov/DLRP/CIFF/. Accessed August 2020.
[13] California Department of Conservation, Division of Land Resource Protection. Accessible at http://www.conservation.ca.gov/dlrp/Pages/qh_lesa.aspx. Accessed September 2018

a 100-point scale. The factors are then weighted relative to one another and combined, resulting in a single numeric score for a given project, with a maximum attainable score of 100 points. This final project score becomes the basis for making a determination of the potential impacts' level of significance for the project, based upon a range of established scoring thresholds.

*Land Evaluation Factors*

The LESA includes two LE factors, discussed below, that are separately rated.

The Land Capability Classification Rating (LCC): The LCC indicates the suitability of soils for most kinds of crops. Groupings are made according to the limitations of the soils when used to grow crops and the risk of damage to soils when used in agriculture. Soils are rated from Class I to Class VIII, with soils having the fewest limitations receiving the highest rating (Class I). Specific subclasses are also utilized to further characterize soils.

The Storie Index Rating: The Storie Index provides a numeric rating (based upon a zero to 100 scale) of the relative degree of suitability or value of a given soil for intensive agriculture. The rating is based upon soil characteristics only. Four factors that represent the inherent characteristics and qualities of the soil are considered in the Storie Index rating: profile characteristics, texture of the surface layer, slope, and other factors such as drainage or salinity. In some situations, only the United States Department of Agriculture's LCC information may be available. In those cases, the Storie Index ratings can be calculated from information contained in soil surveys by qualified soil scientists; however, if limitation of time and/or resources restrict the derivation of the Storie Index rating for a given project, it may be possible to adapt the Land Evaluation by relying solely upon the LCC rating.

*Site Assessment Factors*

The four SA factors that are separately rated and included in the LESA are discussed below.

The Project Size Rating: The Project Size rating is based upon identifying acreage figures for three separate groupings of soil classes within the project site, and then determining what grouping generates the highest Project Size score. The Project Size Rating relies upon acreage figures that were tabulated under the Land Capability Classification Rating.

The Water Resources Availability Rating: The Water Resources Availability rating is based upon identifying the various water sources that may supply a given property, and then determining whether different restrictions in supply are likely to take place in years that are characterized as being periods of drought and non-drought.

<u>The Surrounding Agricultural Land Rating</u>: Determination of the Surrounding Agricultural Land rating is based upon identification of a project's Zone of Influence (ZOI), which is defined as that land near a given project, both directly adjoining and within a defined distance away, that is likely to influence, and be influenced by, the agricultural land use of the subject project site. The Surrounding Agricultural Land rating is designed to provide a measurement of the level of agricultural land use for lands close to a given project. The LESA rates the potential significance of the conversion of an agricultural parcel that has a large proportion of surrounding land in agricultural production more highly than one that has relatively small percentage of surrounding land in agricultural production. The definition of the ZOI that accounts for surrounding lands (up to a minimum of 0.25 mile from the project boundary) is the result of several iterations during model development for assessing an area that will generally be a representative sample of surrounding land use. The ZOI surrounding the proposed Project site includes 568.7 acres of land is classified as being 383.1 acres are Prime Farmland, 41.2 are Unique Farmland and the remaining 144.4 acres consist of rural residential land and urban and built-up land and semi-agricultural and rural commercial land (Appendix B).

<u>The Surrounding Protected Resource Land Rating</u>: The Surrounding Protected Resource Land rating is essentially an extension of the Surrounding Agricultural Land rating, and it is scored in a similar manner. Protected resource lands are those lands with long-term use restrictions that are compatible with or supportive of agricultural uses of land. Included among them are the following:

- Williamson Act contracted lands
- Publicly owned lands maintained as a park, forest, or watershed resources
- Lands with agricultural, wildlife habitat, open space, or other natural resource easements that restrict the conversion of such land to urban and industrial uses

*Final LESA Scoring*

A single LESA score is generated for a given project after all the individual LE and SA factors have been scored and weighted. The LESA is weighted so that 50 percent of the total LESA score of a given project is derived from the LE factors and 50 percent is derived from the SA factors. The final LESA score was determined for the proposed Project and the modeling results are described in Table 3.1-2.

**Table 3.1-2**
**Land Evaluation and Site Assessment Model Scoring Summary**

| Category | Factor | Raw Points | Factor Weight | Weighted Points | Comments |
|---|---|---|---|---|---|
| Land Evaluation | Land Capability Class | 89.8 | 0.25 | 22.45 | Majority of site is Class II |
| | Storie Index | 1.01 | 0.25 | 0.25 | Majority of site is ranked as 1 |
| | | **Subtotal** | **0.50** | **22.7** | |
| Site Assessment | Project Size | 100 | 0.15 | 15 | |
| | Water Resource Availability | 100 | 0.15 | 15 | Groundwater is available via on-site wells |
| | Surrounding Agricultural Land | 80 | 0.15 | 12 | |
| | Surrounding Protected Resource Lands | 60 | 0.05 | 3 | Approximately 68% of ZOI is under contract |
| | | **Subtotal** | **0.50** | **45** | |
| | | | Final Score | **67.7** | |

*LESA Thresholds of Significance*

The LESA is designed to make determinations of the potential significance of a project's conversion of agricultural lands during the Initial Study phase of the CEQA process. Scoring thresholds are based upon both the total LESA score and the component LE and SA separate subscores. In this manner, the scoring thresholds are dependent upon the attainment of a minimum score for the LE and SA subscores so that a single threshold is not the result of heavily skewed subscores (i.e., a site with a very high LE score but a very low SA score, or vice-versa). The LESA scoring thresholds are described in Table 3.1-3.

**Table 3.1-3**
**LESA Scoring Thresholds**

| Total LESA Score | Scoring Decision |
|---|---|
| 0 to 39 points | Not considered significant |
| 40 to 59 points | Considered significant only if LE and SA subscores are each greater than or equal to 20 points |
| 60 to 79 points | Considered significant unless either LE or SA subscore is less than 20 points |
| 80 to 100 points | Considered significant |

*LESA Results*

According to the LESA Threshold of Significance, the total score of 67.7 for the proposed Project site is considered significant (see Appendix B).

As discussed in the 2030 Lemoore General Plan EIR, conversion of agricultural land to urban use is not directly mitigable, aside from preventing development altogether. There is no feasible mitigation measure that would reduce the impacts related to of the Prime Farmland converted as a result of development of the proposed Project. Therefore, impacts as a result of farmland conversion are considered ***Significant and Unavoidable.***

**Mitigation Measures**

None are required

**Impact 3.1-2:** *Conflict with existing zoning for agricultural use, or a Williamson Act contract?*

**No Impact.**

<u>Agricultural Zoning</u>

The Project site is currently zoned as Limited Agricultural-10 District by Kings County and as a part of the Project, the Zone District will be changed to Low, Medium and High Density Residential and Parks/Recreation by the City of Lemoore. The new zoning would accommodate the proposed Project and as such, there would be ***no impact*** resulting from a zoning conflict.

<u>Williamson Act Contract</u>

As noted, the Project site is subject to a Williamson Act contract, pursuant to Government Code Section 51200 et seq. The entire Project site is currently under a Williamson Act Contract;

however, a protest was filed with the Local Agency Formation Commission (LAFCo) on December 1, 1982, in accordance with Section 51243.5 (a) of the Government Code, as amended, which will result in a dissolution of the Williamson Act Contract upon annexation of the subject site to the City.

With the dissolution of the Williamson Act Contract, there would be no conflict with a Williamson Act Contract and as such, ***no impacts*** to this subject area.

**Mitigation Measures**

None are required.

**Impact 3.1-3:** *Conflict with existing zoning for, or cause rezoning of, forest land as defined in Public Resources Code section 12220(g), timberland as defined by Public Resources Code section 4526, or timberland zoned Timberland Production (as defined by Government Code section 51104(g)), or result in the loss of forest land or convert forest land to non-forest use?*

**No Impact.** There is no forest land zoning on the proposed Project site and there are no forest uses on the site. No loss of forest land would occur, and no conflicts with forest land zoning would occur. Therefore, there is ***no impact.***

**Mitigation Measures**

None are required.

**Impact 3.1-4**: *Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?*

**Less Than Significant**. The proposed Project site is located in an area that is dominated by farmland / agricultural operations and scattered rural residential housing to the north, east and west, and residential development to the south. The site is partially designated by the City of Lemoore General Plan for future residential uses and is currently zoned as Limited Agricultural-10 District (AL-10) by Kings County. Approximately one-third of the site (the southern one-third) is within the City's SOI while the remaining two-thirds are currently outside the SOI. The entire site is proposed for annexation into the City limits of Lemoore. According to the Agricultural Conversion Study prepared for the Project, the site is substantially surrounded by Prime

Farmland to the north, east and west. However, the requested General Plan Amendment, Zone Change, Sphere of Influence amendment, and annexation is site specific and does not apply to any properties other than the proposed Project site. Therefore, it is unlikely that the Project would result in the conversion of other farmland or forest land. The impact is ***less than significant.***

**Mitigation Measures**

None are required.

**Cumulative Impacts**

**Significant, Unavoidable and Cumulatively Considerable.** The geographic area of this cumulative analysis is the entire State of California. This cumulative analysis is based on the Statewide FMMP map. As discussed above, the Project includes the significant impact related to the conversion of protected farmland to urban uses in addition to amending the existing SOI to include additional agricultural acreage. Amending the SOI will eventually lead to urban development and thereby contribute to the loss of viable agricultural land in the region. As such, the Project would have a ***significant and unavoidable and cumulatively considerable impact*** on agricultural resources.

# 3.2 Air Quality

This section of the DEIR evaluates the potential air quality impacts associated with the implementation of the proposed Project. This assessment was conducted within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000, et seq.). The methodology follows the Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI) prepared by the San Joaquin Valley Air Pollution Control District (District or SJVACPD) for quantification of emissions and evaluation of potential impacts to air resources. The information and analysis presented in this Section are based on the Air Quality and Greenhouse Gas / Energy Analysis Report (AQGGA) prepared for this Project by Mitchell Air Quality Consulting (Appendix B).

## Environmental Setting

San Joaquin Valley Air Basin

*Topography*

The topography of a region is important for air quality because mountains can block airflow that would help disperse pollutants and can channel air from upwind areas that transports pollutants to downwind areas. The Air Basin is generally shaped like a bowl. It is open in the north and is surrounded by mountain ranges on all other sides. The Sierra Nevada mountains are along the eastern boundary (8,000 to 14,000 feet in elevation), the Coast Ranges are along the western boundary (3,000 feet in elevation), and the Tehachapi Mountains are along the southern boundary (6,000 to 8,000 feet in elevation).

*Climate*

The climate is important for air quality because of differences in the atmosphere's ability to trap pollutants close to the ground, which creates adverse air quality; inversely, the atmosphere's ability to rapidly disperse pollutants over a wide area prevents high concentrations from accumulating under different climatic conditions. The San Joaquin Valley Air Basin (Air Basin) has an "inland Mediterranean" climate and is characterized by long, hot, dry summers and short,

foggy winters. Sunlight can be a catalyst in the formation of some air pollutants (such as ozone); the Air Basin averages over 260 sunny days per year.[1]

Inversion layers are significant in determining pollutant concentrations. Concentration levels can be related to the amount of mixing space below the inversion. Temperature inversions that occur on the summer days are usually encountered 2,000 to 2,500 feet above the valley floor. In winter months, overnight inversions occur 500 to 1,500 feet above the valley floor.

Dominant airflows provide the driving mechanism for transport and dispersion of air pollution. The mountains surrounding the Air Basin form natural horizontal barriers to the dispersion of air contaminants. The wind generally flows south-southeast through the valley, through the Tehachapi Pass and into the Mojave Desert Air Basin portion of Kern County. As the wind moves through the Mojave Desert Air Basin, it mixes with the air pollution generated locally, generally transporting air pollutants from the north to the south in the summer and in a reverse flow in the winter.

The winds and unstable air conditions experienced during the passage of winter storms result in periods of low pollutant concentrations and excellent visibility. Between winter storms, high pressure and light winds allow cold moist air to pool on the San Joaquin Valley floor. This creates strong, low-level temperature inversions and very stable air conditions, which can lead to Tule fog. Wintertime conditions favorable to fog formation are also conditions favorable to high concentrations of fine particulate matter ($PM_{2.5}$) and inhalable coarse particulates ($PM_{10}$).

<u>Existing Air Quality Conditions</u>

The local air quality can be evaluated by reviewing relevant air pollution concentrations near the Project area.

Table3.2-1 summarizes 2017 through 2019 published monitoring data, which is the most recent three-year period available. Data was obtained from the closest air monitoring stations with data available. The table displays data from the Hanford S. Irwin Street monitoring station (located approximately 7 miles east of the Project site). The data show that during the past few years, the Project area has exceeded the standards for ozone (state and national), PM10 (state), and PM2.5 (national). The data in the table reflect the concentration of the pollutants in the air, measured using air monitoring equipment. This differs from emissions, which are calculations of a pollutant

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[1] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 15.

being emitted over a certain period. No recent monitoring data for Kings County or for the area defined as the San Joaquin Valley Air Basin were available for carbon monoxide (CO) or sulfur dioxide (SO2). Generally, no monitoring is conducted for pollutants that are no longer likely to exceed ambient air quality standards.

**Table 3.2-1**
**Air Quality Monitoring Summary[2]**

| Air Pollutant | Averaging Time | Item | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|
| Ozone[1] | 1 Hour | Max 1 Hour (ppm) | **0.106** | **0.108** | **0.093** |
| | | Days > State Standard (0.09 ppm) | 7 | 1 | 0 |
| | 8 Hour | Max 8 Hour (ppm) | **0.094** | **0.082** | **0.076** |
| | | Days > State Standard (0.07 ppm) | 42 | 30 | 13 |
| | | Days > National Standard (0.070 ppm) | 38 | 29 | 13 |
| Carbon monoxide (CO) | 8 Hour | Max 8 Hour (ppm) | ND | ND | ND |
| | | Days > State Standard (9.0 ppm) | ND | ND | ND |
| | | Days > National Standard (9 ppm) | ND | ND | ND |
| Nitrogen dioxide ($NO_2$)[1] | Annual | Annual Average (ppm) | 0.008 | 0.008 | 0.008 |
| | 1 Hour | Max 1 Hour (ppm) | 0.0569 | 0.0563 | 0.0629 |
| | | Days > State Standard (0.18 ppm) | 0 | 0 | 0 |
| | Annual | Annual Average (ppm) | ND | ND | ND |
| | 24 Hour | Max 24 Hour (ppm) | ND | ND | ND |

[2] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 25.

| Air Pollutant | Averaging Time | Item | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|
| Sulfur dioxide ($SO_2$) | | Days > State Standard (0.04 ppm) | ND | ND | ND |
| Inhalable coarse particles ($PM_{10}$)[1] | Annual | Annual Average (µg/m$^3$) | 49.9 | 47.3 | 44.8 |
| | 24 hour | 24 Hour (µg/m$^3$) | **298.4** | **174.2** | **211.7** |
| | | Days > State Standard (50 µg/m$^3$) | 122.0 | 113.5 | 104 |
| | | Days > National Standard (150 µg/m$^3$) | 1.0 | 6.1 | 6.6 |
| Fine particulate matter ($PM_{2.5}$)[1] | Annual | Annual Average (µg/m$^3$) 12.0 µg/m$^3$ | **17.1** | **17.7** | **12.1** |
| | 24 Hour | 24 Hour (µg/m$^3$) | **113.4** | **107.8** | **48.2** |
| | | Days > National Standard (35 µg/m$^3$) | 33.8 | 31 | 21.0 |

Notes:

> = exceed ppm = parts per million µg/m$^3$ = micrograms per cubic meter

ID = insufficient data ND = no data max = maximum

**Bold** = exceedance of State or Federal Standard

State Standard = California Ambient Air Quality Standard

National Standard = National Ambient Air Quality Standard

1 Hanford S. Irwin St. Monitoring Station

The health impacts of the various air pollutants of concern can be presented in a number of ways. The clearest of these is comparable with the state and federal ozone standards. If concentrations are below the standard, it is safe to say that no health impact would occur to anyone. When concentrations exceed the standard, impacts will vary based on the amount by which the standard is exceeded. The Environmental Protection Agency (EPA) developed the Air Quality Index (AQI) as an easy-to-understand measure of health impacts compared with concentrations in the air.

**Table 3.2-2**3.2-2 provides a description of the health impacts of ozone at different concentrations.

**Table 3.2-2**
**Air Quality Index and Health Effects from Ozone**[3]

| Air Quality Index/ 8-hour Ozone Concentration | Health Effects Description |
|---|---|
| AQI—51–100—Moderate | **Sensitive Groups**: Children and people with asthma are the groups most at risk. |
| Concentration 55–70 ppb | **Health Effects Statements**: Unusually sensitive individuals may experience respiratory symptoms. |
| | **Cautionary Statements**: Unusually sensitive people should consider limiting prolonged outdoor exertion. |
| AQI—101–150—Unhealthy for Sensitive Groups | **Sensitive Groups**: Children and people with asthma are the groups most at risk. |
| Concentration 71–85 ppb | **Health Effects Statements**: Increasing likelihood of respiratory symptoms and breathing discomfort in active children and adults and people with respiratory disease, such as asthma. |
| | **Cautionary Statements**: Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion. |
| AQI—151–200—Unhealthy | **Sensitive Groups**: Children and people with asthma are the groups most at risk. |
| Concentration 86–105 ppb | **Health Effects Statements**: Greater likelihood of respiratory symptoms and breathing difficulty in active children and adults and people with respiratory disease, such as asthma; possible respiratory effects in general population. |
| | **Cautionary Statements**: Active children and adults, and people with respiratory disease, such as asthma, should |

[3] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 26.

| Air Quality Index/ 8-hour Ozone Concentration | Health Effects Description |
|---|---|
| | avoid prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion. |
| AQI—201–300—Very Unhealthy | **Sensitive Groups**: Children and people with asthma are the groups most at risk. |
| Concentration 106–200 ppb | **Health Effects Statements**: Increasingly severe symptoms and impaired breathing likely in active children and adults and people with respiratory disease, such as asthma; increasing likelihood of respiratory effects in general population. |
| | **Cautionary Statements**: Active children and adults, and people with respiratory disease, such as asthma, should avoid all outdoor exertion; everyone else, especially children, should limit outdoor exertion. |

The AQI for the 8-hour ozone standard is based on the current National Ambient Air Quality Standards (NAAQS) of 70 parts per billion (ppb). Based on the AQI scale for the 8-hour ozone standard, the Project area experienced three days in the last three years that would be categorized as very unhealthy (AQI 201–250), and as many as 77 days that were unhealthy (AQI 151–200) or unhealthy for sensitive groups (AQI 101–150), violating the 70-ppb standard as measured at the Hanford S. Irwin Street monitoring station. The highest reading was 94 parts per billion (ppb) in 2017 (AQI 172), compared with the 105-ppb cutoff point for unhealthy (AQI 200). The most days over the standard were 38 days in 2017.

The other nonattainment pollutant of concern is PM2.5. An AQI of 100 or lower is considered moderate and would be triggered by a 24-hour average concentration of 12.1 to 35.4 µg/m3. An AQI of 101 to 105 or 35.5-55.4 µg/m3 is considered unhealthful for sensitive groups. When concentrations reach this amount, it is considered an exceedance of the federal PM2.5 standard. The monitoring station nearest the Project exceeded the standard on approximately 86 days in the three-year period spanning from 2017 to 2019. The highest number of exceedances was recorded in 2017 with 34 days over the standard. People with respiratory or heart disease, the elderly, and children are the groups most at risk. Unusually sensitive people should consider reducing prolonged or heavy exertion. The AQI of 151 to 200 is classified as unhealthy for everyone. This AQI classification is triggered when PM2.5 concentration ranges from 55.4 to 150.4 µg/m3. At this concentration, there is increasing likelihood of respiratory symptoms in sensitive

individuals, aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease, and in the elderly. People with respiratory or heart disease, the elderly, and children should limit prolonged exertion. Everyone else should reduce prolonged or heavy exertion. The highest concentration recorded at the Hanford S. Irwin Street monitoring station in the last three years was 113.4 µg/m3 (AQI 181) in 2017. At this concentration the air quality is unhealthy for everyone. At this AQI, increased aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly and increased respiratory effects in general population would occur. People with respiratory or heart disease, the elderly, and children should avoid prolonged exertion; everyone else should limit prolonged exertion when the AQI exceeds this level. The relationship of the AQI to health effects is shown in Table3.2-3.

**Table 3.2-3**
**Air Quality Index and Health Effects of Particulate Pollution[4]**

| Air Quality Index/ $PM_{2.5}$ Concentration | Health Effects Description |
|---|---|
| AQI—51–100—Moderate<br>Concentration 12.1–35.4 µg/m³ | **Sensitive Groups**: Some people who may be unusually sensitive to particle. |
| | **Health Effects Statements**: Unusually sensitive people should consider reducing prolonged or heavy exertion. |
| | **Cautionary Statements**: Unusually sensitive people: Consider reducing prolonged or heavy exertion. Watch for symptoms such as coughing or shortness of breath. These are signs to take it easier. |
| AQI—101–150—Unhealthy for Sensitive Groups<br>Concentration 35.5–55.4 µg/m² | **Sensitive Groups**: Sensitive groups include people with heart or lung disease, older adults, children, and teenagers. |
| | **Health Effects Statements**: Increasing likelihood of respiratory symptoms in sensitive individuals, aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease, and the elderly. |
| | **If you have heart disease:** Symptoms such as palpitations, shortness of breath, or unusual fatigue may indicate a |

[4] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 27.

| Air Quality Index/ $PM_{2.5}$ Concentration | Health Effects Description |
|---|---|
| | serious problem. If you have any of these, contact your health care provider. |
| AQI—151–200—Unhealthy<br><br>Concentration 86–105 ppb | **Sensitive Groups**: Children and people with asthma are the groups most at risk. |
| | **Health Effects Statements**: Greater likelihood of respiratory symptoms and breathing difficulty in active children and adults and people with respiratory disease, such as asthma; possible respiratory effects in general population. |
| | **Cautionary Statements**: Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion. |
| AQI—201–300—Very Unhealthy<br><br>Concentration 106–200 ppb | **Sensitive Groups**: Children and people with asthma are the groups most at risk. |
| | **Health Effects Statements**: Increasingly severe symptoms and impaired breathing likely in active children and adults and people with respiratory disease, such as asthma; increasing likelihood of respiratory effects in general population. |
| | **Cautionary Statements**: Active children and adults, and people with respiratory disease, such as asthma, should avoid all outdoor exertion; everyone else, especially children, should limit outdoor exertion. |

### Attainment Status

The federal EPA and the California Air Resources Board (ARB) designate air basins where ambient air quality standards are exceeded as "nonattainment" areas. If standards are met, the area is designated as an "attainment" area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered "unclassified." National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards.

Each standard has a different definition, or "form" of what constitutes attainment, based on specific air quality statistics. For example, the federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the federal annual $PM_{2.5}$ standard is met if the three-year average of the annual average $PM_{2.5}$ concentration is less than or equal to the standard.

The current attainment designations for the Air Basin are shown in Table 3.2-4. The Air Basin is designated as nonattainment for ozone, $PM_{10}$, and $PM_{2.5}$.

**Table 3.2-4**
**San Joaquin Valley Air Basin Attainment Status[5]**

| Pollutant | State Status | National Status |
|---|---|---|
| Ozone—One Hour | Nonattainment/Severe | No Standard |
| Ozone—Eight Hour | Nonattainment | Nonattainment/Extreme |
| Carbon monoxide | Attainment/Unclassified | Merced, Madera, and Kings Counties are unclassified; others are in Attainment |
| Nitrogen dioxide | Attainment | Attainment/Unclassified |
| Sulfur dioxide | Attainment | Attainment/Unclassified |
| $PM_{10}$ | Nonattainment | Attainment |
| $PM_{2.5}$ | Nonattainment | Nonattainment |
| Lead | Attainment | No Designation/Classification |

*Sensitive Receptors*

Sensitive receptors are considered to be more sensitive than others to air pollutants. The reasons for greater than average sensitivity include pre-existing health problems, proximity to emissions sources, or duration of exposure to air pollutants. Residences, schools, hospitals, convalescent homes, and parks are considered to be relatively sensitive to poor air quality because children, elderly people, and the infirm are more susceptible to respiratory distress and other air quality-

[5] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 28.

related health problems than the general public. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods of time, with associated greater exposure to ambient air quality. Recreational uses are also considered sensitive due to greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system.

The project is located on approximately 156-acres of undeveloped, agriculturally zoned land north of the City. Existing development in the Project vicinity includes rural roads, scattered rural residential housing to the north, east and west, and residential development to the south. There is an elementary school  located 0.15 miles of the Project site.

*Toxic Air Contaminants (TAC)*

Hazardous air pollutants (HAPs) is a term used by the federal CAA that includes a variety of pollutants generated or emitted by industrial production activities. Called TACs under the California Clean Air Act of 1988 (CCAA), 10 pollutants have been identified through ambient air quality data as posing the most substantial health risk in California. Direct exposure to these pollutants has been shown to cause cancer, birth defects, damage to brain and nervous system and respiratory disorders. CARB provides emission inventories for only the larger air basins.

Sources include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners and motor vehicle exhaust. TACs do not have ambient air quality standards. Since no safe levels of TACs can be determined, there are no air quality standards for TACs. Instead, TAC impacts are evaluated by calculating the health risks associated with a given exposure. The requirements of the Air Toxic "Hot Spots" Information and Assessment Act apply to facilities that use, produce, or emit toxic chemicals. Facilities that are subject to the toxic emission inventory requirements of the Act must prepare and submit toxic emission inventory plans and reports to CARB and periodically update those reports. While TACs do result in potential health risks for those exposed, the proposed project would not emit TACs with the exception of diesel particulate matter and therefore only diesel particulate matter is described further in this analysis.

The SJVAPCD has established thresholds of significance for combined toxic air contaminant ("TAC") emissions from the operations of both permitted and non-permitted sources. [6] Projects

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[6] SJVAPCD (San Joaquin Valley Air Pollution Control District). 2015. *Guidance for Assessing and Mitigating Air Quality Impacts*. March 2015

that have the potential to expose the public to TACs in excess of the following thresholds would be considered to have a significant air quality impact:

- Probability of contracting cancer for the maximally exposed individual equals or exceeds 20 in 1 million people.
- Hazard Index for acute and chronic noncarcinogenic TACs equals or exceeds 1 for the maximally exposed individual.
    - Non-cancer adverse health impact, both for acute (short-term) and chronic (long-term) health effects, is measured against a hazard index, which is defined as the ratio of the predicted incremental exposure concentration from a project to a published reference exposure level that could cause adverse health effects as established by the Office of Environmental Health Hazard Assessment. The ratio (referred to as the hazard quotient) of each noncarcinogenic substance that affects a certain organ system is added together to produce an overall hazard index for that organ system.

*Airborne Fungus (Valley Fever)*

Coccidioidomycosis, often referred to as San Joaquin Valley Fever or Valley Fever, is one of the most studied and oldest known fungal infections. Valley Fever most commonly affects people who live in hot dry areas with alkaline soil and varies with the season. This disease, which affects both humans and animals, is caused by inhalation of arthroconidia (spores) of the fungus *Coccidioides immitis* (CI). CI spores are found in the top few inches of soil and the existence of the fungus in most soil areas is temporary. The cocci fungus lives as a saprophyte in dry, alkaline soil. When weather and moisture conditions are favorable, the fungus "blooms" and forms many tiny spores that lie dormant in the soil until they are stirred up by wind, vehicles, excavation, or other ground-moving activities and become airborne. Agricultural workers, construction workers, and other people who work outdoors and who are exposed to wind and dust are more likely to contract Valley Fever. Children and adults whose hobbies or sports activities expose them to wind and dust are also more likely to contract Valley Fever. After the fungal spores have settled in the lungs, they change into a multicelluar structure called a spherule. Fungal growth in the lungs occurs as the spherule grows and bursts, releasing endospores, which then develop into more spherules.

The CI fungal spores are often found in the soil around rodent burrows, Indian ruins, and burial grounds. The spores become airborne when the soil is disturbed by winds, construction, farming and soil disturbing activities. This type of fungus is endemic to the southwestern United States

and more common in Kings County. The ecological factors that appear to be most conducive to the survival and replication of the fungal spores are high summer temperatures, mild winters, sparse rainfall, and alkaline, sandy soils. During drought years, the number of organisms competing with CI decreases, and the CI remains alive, but dormant. When rain finally occurs, the arthrocondia germinate and multiply more than usual because of a decreased number of other competing organisms. Later, the soil dries out in the summer and fall, and the fungi can become airborne and potentially infectious.

About 60 percent of Valley Fever cases are mild and display flu-like symptoms or no symptoms at all. Of those who are exposed and seek medical treatment, the most common symptoms include fatigue, cough, loss of appetite, rash, headache, and joint aches. In some cases, painful red bumps may develop on the skin. One important fact to mention is that these symptoms are not unique to Valley Fever and may be caused by other illnesses as well. Identifying and confirming this disease require specific laboratory tests such as: (1) microscopic identification of the fungal spherules in infected tissue, sputum or body fluid sample; (2) growing a culture of CI from a tissue specimen, sputum, or body fluid; (3) detection of antibodies (serological tests specifically for Valley Fever) against the fungus in blood serum or other body fluids; and (4) administering the Valley Fever Skin Test (called coccidioidin or spherulin), which indicate prior exposure to the fungus (Valley Fever Center for Excellence, 2017).

Valley Fever is not contagious, and therefore, cannot be passed on from person to person. Most of those who are infected would recover without treatment within six months and would have a life-long immunity to the fungal spores. In severe cases, especially in those patients with rapid and extensive primary illness, those who are at risk for dissemination of disease, and those who have disseminated disease (fungus leaves the lungs and goes to other places in the body), antifungal drug therapy is used. The type of medication used and the duration of drug therapy are determined by the severity of disease and response to the therapy. The medications used include ketoconazole, itraconazole and fluconazole in chronic, mild-to-moderate disease, and amphotericin B, given intravenously or inserted into the spinal fluid, for rapidly progressive disease.

Factors that increase your chances of getting valley fever in Kings County include the length of time living in the county, duration of time spent in dusty conditions, being caught in a dust storm, activities involving intensive contact with undisturbed soils, duration of time spent outdoors, spending time outside in June through December, being a male, aged 15 to 44, and the area of the county you live in (KCPHSD, 2017c). Residents new to the San Joaquin Valley are at a higher risk of infection due primarily to low immunity to this particular fungus. Many long-time residents

exposed to Valley Fever have recovered and therefore developed a life-long immunity to the disease.

## Regulatory Setting

Federal Regulations

*Clean Air Act (CAA)*

Congress established much of the basic structure of the Clean Air Act (CAA) in 1970 and made major revisions in 1977 and 1990. Six common air pollutants (also known as criteria pollutants) are addressed in the CAA: particulate matter, ground-level ozone, carbon monoxide (CO), sulfur oxides ($SO_X$), nitrogen oxides ($NO_X$), and lead. The EPA labels these pollutants as criteria air pollutants because they are regulated by developing human health-based and/or environmentally based criteria (science-based guidelines), which sets permissible levels. The set of limits based on human health are called primary standards. Another set of limits intended to prevent environmental and property damage are called secondary standards.[7] The federal standards are called National Ambient Air Quality Standards (NAAQS). The air quality standards provide benchmarks for determining whether air quality is healthy at specific locations and whether development activities will cause or contribute to a violation of the standards. The criteria pollutants are:

- Ozone
- Nitrogen dioxide ($NO_2$)
- Lead
- Particulate matter ($PM_{10}$ and $PM_{2.5}$)
- Carbon monoxide (CO)
- Sulfur dioxide

The federal standards were set to protect public health, including that of sensitive individuals; thus, the EPA is tasked with updating the standards as more medical research is available regarding the health effects of the criteria pollutants. Primary federal standards are the levels of air quality necessary, with an adequate margin of safety, to protect the public health.[8]

State of California Regulations

*California Clean Air Act (CCAA)*

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[7] Ibid. Page 16.

[8] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 16.

The California Legislature enacted the California Clean Air Act (CCAA) in 1988 to address air quality issues of concern not adequately addressed by the federal CAA at the time. California's air quality problems were and continue to be some of the most severe in the nation and required additional actions beyond the federal mandates. The California Air Resources Board (ARB) administers California Ambient Air Quality Standards (CAAQS) for the 10 air pollutants designated in the CCAA. The 10 state air pollutants are the six federal standards listed above as well visibility-reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride. The EPA authorized California to adopt its own regulations for motor vehicles and other sources that are more stringent than similar federal regulations implementing the federal CAA. Generally, the planning requirements of the CCAA are less stringent than the federal CAA; therefore, consistency with the CAA will also demonstrate consistency with the CCAA.

*Toxic Air Contaminants (TAC)*

A toxic air contaminant (TAC) is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. There are no ambient air quality standards for TAC emissions. TACs are regulated in terms of health risks to individuals and populations exposed to the pollutants. The 1990 Clean Air Act Amendments significantly expanded the EPA's authority to regulate hazardous air pollutants (HAP). Section 112 of the Clean Air Act lists 187 hazardous air pollutants to be regulated by source category. Authority to regulate these pollutants was delegated to individual states. ARB and local air districts regulate TACs and HAPs in California.

*Air Pollutant Description and Health Effects*

A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. The California Almanac of Emissions and Air Quality presents the relevant concentration and cancer risk data for the ten TACs that pose the most substantial health risk in California based on available data. The ten TACs are acetaldehyde, benzene, 1.3-butadiene, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter (DPM).

Some studies indicate that DPM poses the greatest health risk among the TACs listed above. A 10-year research program (ARB 1998) demonstrated that DPM from diesel-fueled engines is a

human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic health risk. In addition to increased risk of lung cancer, exposure to diesel exhaust can have other health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause a cough, headaches, lightheadedness, and nausea. Diesel exhaust is a major source of fine particulate pollution as well, and studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems. The federal and state ambient air quality standards, relevant effects, properties, and sources of the pollutants are summarized in Table 1 of Appendix B.

DPM differs from other TACs in that it is not a single substance, but a complex mixture of hundreds of substances. Although DPM is emitted by diesel-fueled, internal combustion engines, the composition of the emissions varies, depending on: engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. Unlike the other TACs, however, no ambient monitoring data are available for DPM because no routine measurement method currently exists. The ARB has made preliminary concentration estimates based on a DPM exposure method. This method uses the ARB emissions inventory's $PM_{10}$ database, ambient $PM_{10}$ monitoring data, and the results from several studies to estimate concentrations of DPM.

Health risks attributable to the top 10 TACs listed above are available from the ARB as part of its California Almanac of Emissions and Air Quality—2009 Edition.[9] As shown therein for data collected at the First Street air monitoring station in Fresno, cancer risks attributable to all of the listed TACs above with the exception of DPM have declined about 70 percent from the mid-1990s to 2007. Risks associated with DPM emissions are provided only for the year 2000 and have not been updated in the Almanac. Although more recent editions of the Almanac do not provide estimated risk, they do provide emission inventories for DPM for later years. The 2013 Almanac provided emission inventory trends for DPM from 2000 through 2035. The same Almanac reports that DPM emissions were reduced in the Air Basin from 16 tons per day in 2000 to 11 tons per day in 2010, a 31 percent decrease. DPM emissions in the San Joaquin Valley are projected to decrease to six tons per day by 2015, a 62 percent reduction from year 2000 levels. ARB predicts a reduction to three tons per day by 2035, which would be an 81 percent reduction from year 2000

[9] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 24.

levels. Continued implementation of the ARB's Diesel Risk Reduction Plan is expected to provide continued reductions in DPM through 2020 and beyond through regulations on this source.[10]

Asbestos is the name given to a number of naturally occurring fibrous silicate minerals that have been mined for their useful properties such as thermal insulation, chemical and thermal stability, and high tensile strength. The three most common types of asbestos are chrysotile, amosite, and crocidolite. Chrysotile, also known as white asbestos, is the most common type of asbestos found in buildings. Chrysotile makes up approximately 90 to 95 percent of all asbestos contained in buildings in the United States. Exposure to asbestos is a health threat; exposure to asbestos fibers may result in health issues such as lung cancer, mesothelioma (a rare cancer of the thin membranes lining the lungs, chest, and abdominal cavity), and asbestosis (a non-cancerous lung disease that causes scarring of the lungs). Exposure to asbestos can occur during demolition or remodeling of buildings that were constructed prior to the 1977 ban on asbestos for use in buildings. Exposure to naturally occurring asbestos can occur during soil-disturbing activities in areas with deposits present. No naturally occurring asbestos is located near the Project site.[11]

*Air Quality Plans and Regulations*

Air pollutants are regulated at the national, state, and air basin or county level, and each agency has a different level of regulatory responsibility: the EPA regulates at the national level, the ARB at the state level, and the District at the air basin level.

The EPA is responsible for national and interstate air pollution issues and policies. The EPA sets national vehicle and stationary source emission standards, oversees approval of all State Implementation Plans, provides research and guidance for air pollution programs, and sets National Ambient Air Quality Standards—also known as the federal standards described earlier.

A State Implementation Plan (SIP) is a document prepared by each state describing existing air quality conditions and measures that will be followed to attain and maintain federal standards. The SIP for the State of California is administered by the ARB, which has overall responsibility for statewide air quality maintenance and air pollution prevention. California's SIP incorporates individual federal attainment plans for regional air districts; specifically, an air district prepares their federal attainment plan, which is sent to ARB to be approved and incorporated into California's SIP. Federal attainment plans include the technical foundation for understanding air

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[10] Ibid. Page 24.

[11] Op Cit. Page 24.

quality (e.g., emission inventories and air quality monitoring), control measures and strategies, and enforcement mechanisms. The ARB then submits the SIP to the EPA for approval. After reviewing submitted SIPs, the EPA proposes to approve or disapprove all or part of each plan. The public has an opportunity to comment on the EPA's proposed action. EPA considers public input before taking final action on a state's plan. If EPA approves all or part of a SIP, those control measures are enforceable in federal court. If a state fails to submit an approvable plan or if EPA disapproves a plan, the EPA is required to develop a federal implementation plan (FIP). The SIP approval process often takes several years. The most recent federally approved attainment plans for the SJVAPCD are the 2007 8-Hour Ozone Attainment Plan and the 2012 PM2.5 Plan for the 2006 PM2.5 standard.

Areas designated nonattainment must develop air quality plans and regulations to achieve standards by specified dates, depending on the severity of the exceedances. For much of the country, implementation of federal motor vehicle standards and compliance with federal permitting requirements for industrial sources are adequate to attain air quality standards on schedule. For many areas of California, however, additional state and local regulation is required to achieve the standards. Regulations adopted by California are described below.

**Low-Emission Vehicle Program.** The ARB first adopted Low-Emission Vehicle (LEV) program standards in 1990. These first LEV standards ran from 1994 through 2003. LEV II regulations, running from 2004 through 2010, represent continuing progress in emission reductions. As the State's passenger vehicle fleet continues to grow and more sport utility vehicles and pickup trucks are used as passenger cars rather than work vehicles, the more stringent LEV II standards were adopted to provide reductions necessary for California to meet federally mandated clean air goals outlined in the 1994 State Implementation Plan. In 2012, ARB adopted the LEV III amendments to California's LEV regulations. These amendments, also known as the Advanced Clean Car Program, include more stringent emission standards for model years 2017 through 2025 for both criteria pollutants and greenhouse gases (GHGs) for new passenger vehicles.[12]

**On-Road Heavy-Duty Vehicle Program.** The ARB has adopted standards for emissions from various types of new on-road heavy-duty vehicles. Section 1956.8, Title 13, California Code of Regulations contains California's emission standards for on-road heavy-duty engines and vehicles, as well as test procedures. ARB has also adopted programs to reduce emissions from in-use heavy-duty vehicles including the Heavy-Duty Diesel Vehicle Idling Reduction Program, the

[12] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 30.

Heavy-Duty Diesel In-Use Compliance Program, the Public Bus Fleet Rule and Engine Standards, and the School Bus Program and others.

The regulation applies to nearly all privately and federally owned diesel-fueled trucks and buses and to privately and publicly owned school buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds. The regulation provides a variety of flexibility options tailored to fleets operating low-use vehicles, fleets operating in selected vocations like agricultural and construction, and small fleets of three or fewer trucks. [13]

**ARB Truck and Bus Regulation.** The latest amendments to the Truck and Bus regulation became effective on December 31, 2014. The amended regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Newer heavier trucks and buses must meet PM filter requirements beginning January 1, 2012. Lighter and older heavier trucks must be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent.

The regulation applies to nearly all privately and federally owned diesel-fueled trucks and buses and to privately and publicly owned school buses with a GVWR greater than 14,000 pounds. The regulation provides a variety of flexibility options tailored to fleets operating low-use vehicles, fleets operating in selected vocations like agricultural and construction, and small fleets of three or fewer trucks.[14]

**Advanced Clean Truck Regulation.** The Advanced Clean Trucks regulation was approved on June 25, 2020 and has two main components, a manufacturers Zero-Emission Vehicle (ZEV) sales requirement and a one-time reporting requirement for large entities and fleets. Promoting the development and use of advanced clean trucks will help CARB achieve its emission reduction strategies as outlined in the SIP, Sustainable Freight Action Plan, Senate Bill (SB) 350, and Assembly Bill (AB) 32.

The proposed regulation has two components including a manufacturer sales requirement, and a reporting requirement:

- Zero-emission truck sales: Manufacturers who certify Class 2b-8 chassis or complete vehicles with combustion engines would be required to sell zero-emission trucks as an increasing percentage of their annual California sales from 2024 to 2035. By 2035, zero-

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[13] Ibid.

[14] Ibid. Page 30.

emission truck/chassis sales would need to be 55% of Class 2b – 3 truck sales, 75% of Class 4 –8 straight truck sales, and 40% of truck tractor sales.

- Company and fleet reporting: Large employers including retailers, manufacturers, brokers and others would be required to report information about shipments and shuttle services. Fleet owners, with 50 or more trucks, would be required to report about their existing fleet operations. This information would help identify future strategies to ensure that fleets purchase available zero-emission trucks and place them in service where suitable to meet their needs.[15]

**ARB Regulation for In-Use Off-Road Diesel Vehicles.** On July 26, 2007, the ARB adopted a regulation to reduce DPM and nitrous oxide ($NO_X$) emissions from in-use (existing) off-road heavy-duty diesel vehicles in California. Such vehicles are used in construction, mining, and industrial operations. The regulation limits idling to no more than five consecutive minutes, requires reporting and labeling, and requires disclosure of the regulation upon vehicle sale. The ARB is enforcing that part of the rule with fines up to $10,000 per day for each vehicle in violation. Performance requirements of the rule are based on a fleet's average $NO_X$ emissions, which can be met by replacing older vehicles with newer, cleaner vehicles or by applying exhaust retrofits. The regulation was amended in 2010 to delay the original timeline of the performance requirements, making the first compliance deadline January 1, 2014 for large fleets (over 5,000 horsepower), 2017 for medium fleets (2,501–5,000 horsepower), and 2019 for small fleets (2,500 horsepower or less).

**ARB Regulation for Consumer Products.** The ARB Consumer Products Regulation was last amended in January 2015. The ARB regulates the VOC content of a wide variety of consumer products sold and manufactured in California. The purposed of the regulation is to reduce the emission of ozone precursors, TACs, and GHG emissions in products that are used by homes and businesses. The regulated products include but are not limited to solvents, adhesives, air fresheners, soaps, aromatic compounds, windshield cleaners, charcoal lighter, dry cleaning fluids, floor polishes, and general cleaners and degreasers.

**ARB Airborne Toxic Control Measure for Asbestos.** In July 2001, the ARB approved an Air Toxic Control Measure (ATCM) for construction, grading, quarrying, and surface mining operations to minimize emissions of naturally occurring asbestos. The regulation requires application of best management practices to control fugitive dust in areas known to have naturally occurring

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[15] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 31.

asbestos and requires notification to the local air district prior to commencement of ground-disturbing activities. The measure establishes specific testing, notification and engineering controls prior to grading, quarrying, or surface mining in construction zones where naturally occurring asbestos is located on projects of any size. There are additional notification and engineering controls at work sites larger than 1 acre in size. These projects require the submittal of a Dust Mitigation Plan and approval by the air district prior to the start of a project.

Construction sometimes requires the demolition of existing buildings where construction occurs. The Project includes no demolition. Buildings often include materials containing asbestos. Asbestos is also found in a natural state, known as naturally occurring asbestos. Exposure and disturbance of rock and soil that naturally contain asbestos can result in the release of fibers into the air and consequent exposure to the public. Asbestos most commonly occurs in ultramafic rock that has undergone partial or complete alteration to serpentine rock (serpentinite) and often contains chrysotile asbestos. In addition, another form of asbestos, tremolite, can be found associated with ultramafic rock, particularly near faults. Sources of asbestos emissions include unpaved roads or driveways surfaced with ultramafic rock, construction activities in ultramafic rock deposits, or rock quarrying activities where ultramafic rock is present.

The ARB has an ATCM for construction, grading, quarrying, and surface mining operations, requiring the implementation of mitigation measures to minimize emissions of asbestos-laden dust. The measure applies to road construction and maintenance, construction and grading operations, and quarries and surface mines when the activity occurs in an area where naturally occurring asbestos is likely to be found. Areas are subject to the regulation if they are identified on maps published by the California Department of Conservation (DOC) as ultramafic rock units or if the Air Pollution Control Officer or owner/operator has knowledge of the presence of ultramafic rock, serpentine, or naturally occurring asbestos on the site. The measure also applies if ultramafic rock, serpentine, or asbestos is discovered during any operation or activity. Review of the DOC maps indicates that no ultramafic rock has been found near the area.

**Diesel Risk Reduction Plan.** The ARB's Diesel Risk Reduction Plan has led to the adoption of state regulatory standards for all new on-road, off-road, and stationary diesel-fueled engines and vehicles to reduce DPM emissions by about 90 percent overall from year 2000 levels. The projected emission benefits associated with the full implementation of this plan, including federal

measures, are reductions in DPM emissions and associated cancer risks of 75 percent by 2010, and 85 percent by 2020.[16]

San Joaquin Valley Air Pollution Control District Regulations

The San Joaquin Valley Air Pollution Control District (District or SJVACPD) is responsible for controlling emissions primarily from stationary sources. The District, in coordination with eight countywide transportation agencies, is also responsible for developing, updating, and implementing air quality plans for the SJVACPD.

*Ozone Plans*

The Air Basin is designated nonattainment of state and federal health-based air quality standards for ozone. To meet Clean Air Act requirements for the one-hour ozone standard, the District adopted an Extreme Ozone Attainment Demonstration Plan in 2004, with an attainment date of 2010. Although the EPA revoked the federal 1-hour ozone standard effective June 15, 2005 and replaced it with an 8-hour standard, the requirement to submit a plan for that standard remained in effect for the San Joaquin Valley.

The planning requirements for the 1-hour plan remain in effect until replaced by a federal 8-hour ozone attainment plan. On March 8, 2010, the EPA approved the 2004 Extreme Ozone Attainment Demonstration Plan, including revisions to the plan, effective April 7, 2010. However, the Air Basin failed to attain the standard in 2010 and was subject to a $29-million Clean Air Act penalty. The penalty is being collected through an additional $12 motor vehicle registration surcharge for each passenger vehicle registered in the Air Basin that will be applied to pollution reduction programs in the region. The District also instituted a more robust ozone episodic program to reduce emissions on days with the potential to exceed the ozone standards. On July 18, 2016, the EPA published in the Federal Register a final action determining that the San Joaquin Valley has attained the 1-hour ozone national ambient air quality standard. This determination is based on the most recent three-year period (2012-2014) of sufficient, quality-assured, and certified data. The penalty fees remain in place pending submittal of a demonstration that the San Joaquin Valley will maintain the 1-hour standard for 10 years.[17]

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[16] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 32.

[17] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 33.

The EPA originally classified the Air Basin as serious nonattainment for the 1997 federal 8-hour ozone standard with an attainment date of 2013. On April 30, 2007, the District's Governing Board adopted the 2007 Ozone Plan, which contained analysis showing a 2013 attainment target to be infeasible. The 2007 Ozone Plan details the plan for achieving attainment on schedule with an "extreme nonattainment" deadline of 2024. At its adoption of the 2007 Ozone Plan, the District also requested a reclassification to extreme nonattainment. ARB approved the plan in June 2007, and the EPA approved the request for reclassification to extreme nonattainment on April 15, 2010.

The 2007 Ozone Plan contains measures to reduce ozone and particulate matter precursor emissions to bring the Air Basin into attainment with the federal 8-hour ozone standard. The 2007 Ozone Plan calls for a 75 percent reduction of NOX and a 25 percent reduction of reactive organic gases (ROG). Figure 4 of Appendix B displays the anticipated NOX reductions attributed in the 2007 Ozone Plan (Source: 2007 Ozone Plan). The plan, with innovative measures and a "dual path" strategy, assures expeditious attainment of the federal 8-hour ozone standard for all Air Basin residents. The District Governing Board adopted the 2007 Ozone Plan on April 30, 2007. The ARB approved the plan on June 14, 2007. The 2007 Ozone Plan requires yet to be determined "Advanced Technology" to achieve additional reductions after 2021, in order to attain the standard at all monitoring stations in the Air Basin by 2024 as allowed for areas designated extreme nonattainment by the federal Clean Air Act.

The Air Basin is designated as an extreme ozone nonattainment area for the EPA's 2008 8-hour ozone standard of 75 ppb. The District's Governing Board approved the 2016 Plan for the 2008 8-Hour Ozone Standard on June 16, 2016. The ARB approved the attainment demonstration plan for the San Joaquin Valley on July 21, 2016 and transmitted the plan to the EPA on August 24, 2016. The comprehensive strategy in this plan will reduce $NO_X$ emissions by over 60 percent between 2012 and 2031 and will bring the San Joaquin Valley into attainment of the EPA's 2008 8-hour ozone standard as expeditiously as practicable, no later than December 31, 2031. The 2016 Ozone Plan predicts attainment of the 2008 standard by 2031.[18] To ensure that the plan is approvable with the necessary contingencies, the plan includes a "Black Box" that will require implementation of new advanced technologies and controls prior to the 2031 deadline.

18 Ibid. Page 30.

The EPA Administrator signed the Final Rule revising the 8-hour ozone standard to 70 ppm on October 1, 2015. The new standard will require the District to prepare a new attainment to achieve the more stringent emission level within 20 years from the effective date of designation.[19]

State ozone standards do not have an attainment deadline but require implementation of all feasible measures to achieve attainment at the earliest date possible. This is achieved through compliance with the federal deadlines and control measure requirements.

*Particulate Matter Plans*

The Air Basin was designated nonattainment of state and federal health-based air quality standards for $PM_{10}$. The Air Basin is also designated nonattainment of state and federal standards for $PM_{2.5}$.

To meet Clean Air Act requirements for the $PM_{10}$ standard, the District adopted a $PM_{10}$ Attainment Demonstration Plan (Amended 2003 $PM_{10}$ Plan and 2006 $PM_{10}$ Plan), which has an attainment date of 2010. The District adopted the 2007 $PM_{10}$ Maintenance Plan in September 2007 to assure the San Joaquin Valley's continued attainment of the EPA's $PM_{10}$ standard. The EPA designated the Valley as an attainment/maintenance area for $PM_{10}$ on September 25, 2008. Although the San Joaquin Valley has exceeded the standard since then, those days were considered exceptional events that are not considered a violation of the standard for attainment purposes.

The 2008 $PM_{2.5}$ Plan builds upon the comprehensive strategy adopted in the 2007 Ozone Plan to bring the Air Basin into attainment of the 1997 national standards for $PM_{2.5}$. The EPA has identified $NO_X$ and $SO_2$ as precursors that must be addressed in air quality plans for the 1997 $PM_{2.5}$ standards. The 2008 $PM_{2.5}$ Plan is a continuation of the District's strategy to improve the air quality in the Air Basin. The EPA issued final approval of the 2008 $PM_{2.5}$ Plan on November 9, 2011, which became effective on January 9, 2012. The EPA approved the emissions inventory, the reasonably available control measures/reasonably available control technology demonstration, reasonable further progress demonstration, attainment demonstration and associated air quality modeling, and the transportation conformity motor vehicle emissions budgets. The EPA also granted California's request to extend the attainment deadline for the San Joaquin Valley to April 5, 2015 and approved commitments to measures and reductions by the District and the ARB.

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[19] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 34.

Finally, it disapproved the State Implementation Plan's contingency provisions and issued a protective finding for transportation conformity determinations.

In December 2012, the District adopted the 2012 $PM_{2.5}$ Plan to bring the San Joaquin Valley into attainment of the EPA's 2006 24-hour $PM_{2.5}$ standard of 35 $\mu g/m^3$. The ARB approved the District's 2012 $PM_{2.5}$ Plan for the 2006 standard at a public hearing on January 24, 2013.[20] This plan seeks to bring the Valley into attainment with the standard by 2019, with the expectation that most areas will achieve attainment before that time.

The 2015 Plan for the 1997 $PM_{2.5}$ Standard approved by the District Governing Board on April 16, 2015—will bring the Valley into attainment of the EPA's 1997 $PM_{2.5}$ standard as expeditiously as practicable, but no later than December 31, 2020. The plan was required to request reclassification to Serious nonattainment and to extend the attainment date from 2018 to 2020.[21]

The 2016 Moderate Area Plan for the 2012 $PM_{2.5}$ Standard was adopted on September 15, 2016. This plan includes an attainment impracticability demonstration and request for reclassification of the Valley from Moderate nonattainment to Serious nonattainment. The 2016 $PM_{2.5}$ Plan is under ARB review.[22]

The District adopted the 2018 Plan for the 1997, 2006, and 2012 $PM_{2.5}$ Standards on November 15, 2018. This plan provides a combined strategy to address the EPA federal 1997 annual $PM_{2.5}$ standard of 15 $\mu g/m^3$ and 24-hour $PM_{2.5}$ standard of 65 $\mu g/m^3$; the 2006 24-hour $PM_{2.5}$ standard of 35 $\mu g/m^3$; and the 2012 annual $PM_{2.5}$ standard of 12 $\mu g/m^3$. This plan demonstrates attainment of the federal $PM_{2.5}$ standards as expeditiously as practicable.[23]

*District Rules and Regulations*

The District rules and regulations that may apply to the Project include, but are not limited to the following:

**Rule 4102—Nuisance.** The purpose of this rule is to protect the health and safety of the public and applies to any source operation that emits or may emit air contaminants or other materials. Agricultural activities are exempt from the nuisance rule.

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[20] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 35.
[21] Ibid.
[22] Ibid.
[23] Ibid.

**Rule 4601—Architectural Coatings.** The purpose of this rule is to limit Volatile Organic Compounds (VOC) emissions from architectural coatings. Emissions are reduced by limits on VOC content and providing requirements on coatings storage, cleanup, and labeling. Only compliant components are available for purchase in the San Joaquin Valley.

**Rule 4641—Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations.** The purpose of this rule is to limit VOC emissions from asphalt paving and maintenance operations. If asphalt paving will be used, then the paving operations will be subject to Rule 4641. This regulation is enforced on the asphalt provider.

**Rule 4901—Wood-Burning Fireplaces and Wood-Burning Heaters.** The purposes of this rule are to limit emissions of carbon monoxide and particulate matter from wood-burning fireplaces, wood-burning heaters, and outdoor wood-burning devices, and to establish a public education program to reduce wood-burning emissions. All development that includes wood-burning devices are subject to this rule.

**Rule 4902—Residential Water Heaters.** In 2009, the District amended Rule 4902 to strengthen the rule by lowering the limit to 10 nanograms per joule (ng/J) for new or replacement water heaters, and to a limit of 14 ng/J for instantaneous water heaters. Retailer compliance dates ranged from 2010 to 2012, depending on the unit type.

**Regulation VIII—Fugitive $PM_{10}$ Prohibitions.** This regulation is a control measure that is one main strategies from the 2006 $PM_{10}$ for reducing the $PM_{10}$ emissions that are part of fugitive dust. Projects over 10 acres are required to file a Dust Control Plan (DCP) containing dust control practices sufficient to comply with Regulation VIII. Rule 8021 regulates construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and trackout, etc. All development projects that involve soil disturbance are subject to at least one provision of the Regulation VIII series of rules.

**Rule 9510—Indirect Source Review.** This rule reduces the impact of NOX and PM10 emissions from growth within the Air Basin. The rule places application and emission reduction requirements on development projects meeting applicability criteria in order to reduce emissions through on-site mitigation, off-site District-administered projects, or a combination of the two. This Project is subject to Rule 9510 because it would develop more than 50 residential dwelling units.

Local Regulations

The City of Lemoore General Plan lists the following policies from the Conservation and Open Space chapter that are supportive of improved air quality:

*Guiding Policies*

**COS-G-12:** Make air quality a priority in land use planning by implementing emissions reduction efforts targeting mobile sources, stationary sources and construction related sources.

**COS-G-13:** Minimize exposure to toxic air pollutant emissions and noxious odors from industrial, manufacturing and processing facilities.

**COS-G-14:** Utilize diverse and creative mitigation approaches to manage remaining levels of air pollution that cannot be reduced or avoided.

*Implementing Policies*

**COS-I-41:** Amend the Zoning Ordinance to prohibit locating new "sensitive receptor" uses—hospitals, residential care facilities and child care facilities—within:
-500 feet of a freeway, urban roads carrying 100,000 vehicles per day, or rural roads carrying 50,000 vehicles per day.
-1,000 feet of a distribution center (that accommodates more than 100 trucks a day, more than 40 trucks with operating transport refrigeration units (TRUs) a day, or where TRU operation exceeds 300 hours per week).
-300 feet of any dry-cleaning operation that uses toxic chemicals. For operations with two or more machines, provide 500 feet. For operations with three or more machines, consult your local air district.
-300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons or more per year).

**COS-I-42:** Conforming to the SJVAPCD Fugitive Dust Rule, require developers to use best management practices (BMPs) to reduce particulate emission as a condition of approval for subdivision maps, site plans and all grading permits. BMPs include:

- During clearing, grading, earth-moving or excavation operations, fugitive dust emissions shall be controlled by regular watering, paving of construction roads, or other dust-preventive measures;
- All materials excavated or graded shall be either sufficiently watered or covered by canvas or plastic sheeting to prevent excessive amounts of dust;

- All materials transported off-site shall be either sufficiently watered or covered by canvas or plastic sheeting to prevent excessive amounts of dust;
- All motorized vehicles shall have their tires watered before exiting a construction site;
- The area disturbed by demolition, clearing, grading, earth-moving, or excavation shall be minimized at all times; and
- All construction-related equipment shall be maintained in good working order to reduce exhaust.

**COS-I-43:** Enact a wood-burning ordinance compliant with District Rule 4901 that:

- Regulates the installation of EPA-certified wood heaters or approved woodburning appliances in new developments or replacements;
- Lists permitted and prohibited fuels; and
- Describes a "No Burn" policy on days when the air quality is poor.

**COS-I-45:** Utilize more plants and trees in public area landscaping, focusing on those that are documented as more efficient pollutant absorbers.

**COS-I-46:** Establish a Clean Air Awards Program to acknowledge outstanding effort and to educate the public about the linkages between land use, transportation and air quality.

**COS-I-47:** Coordinate air quality planning efforts and CEQA review of discretionary projects with potential for causing adverse air quality impacts with other local, regional and State agencies.

*The City will work with the San Joaquin Valley Air Pollution Control District on parallel initiatives for air quality, so programs are complementary and uniform wherever possible.*

**COS-I-48:** Educate employees and department managers about sustainability with a focus on specific operational changes that can be made to reduce greenhouse gas emissions, such as fuel-efficient driving and reducing energy use at work.

**COS-I-49:** Require tenants of all new development within one mile of industrial land uses to record odor easements attesting to the presence of nearby industry and acknowledging the right of said industry to emit odors that are not a threat to human health.

The following air quality supportive policies are from the General Plan Circulation chapter:

**C-I-4:** Develop a multi-modal transit system map integrating bicycle, public transportation, pedestrian and vehicle linkages within the City to ensure circulation gaps are being met. Safe Routes to School and any necessary related improvements will also be shown on this map, and costs and priorities indicated based on need.

**C-I-5:** Use traffic calming measures to reduce speeds in existing and future residential areas. Traffic calming measures may include, but are not limited to:

-Reducing curb-to-curb pavement widths to the minimum necessary to ensure traffic flow and safety;
-Allowing on-street parking where possible;
-Providing generous street tree plantings and other vegetation;
-Building corner bulb-outs and intersection roundabouts;
-Allowing for curvilinear street design; and
-Installing, where appropriate, specific traffic calming features, such as bulb-outs and medians.

<u>Public Transit</u>

***C-G-1 Guiding Policies***

**C-G-2**: Promote improved transit service and the development and use of park-and-ride facilities for commuters.

***C-G-3 Implementing Actions***

**C-I-1:** Coordinate with Caltrans and Kings Area Rural Transit to identify and implement Park & Ride sites with convenient access to public transit.
*Park & Ride areas should include secure parking for cars, motorcycles, and bicycles, and have minimal impact on neighborhoods.*

**C-I-2:** Work with Kings Area Rural Transit to situate transit stops and hubs at locations that are convenient for transit users and promote increased transit ridership through the provision of benches, bike racks on buses, and other amenities.
This will include identifying existing underserved neighborhoods and new areas under development that will need transit service. The Kings County Association of Governments conducts annual transit needs public hearings where the City and the public may express their transit needs.

**C-I-3:** Work with Kings Area Rural Transit to provide accessible, well lighted and attractive bus shelters that are compatible with surrounding neighborhoods.
Bus shelters should be located within landscape easement areas adjacent to the pedestrian sidewalks and incorporate features that are handicapped-friendly. They should be designated to discourage overnight sleepers and withstand vandalism. The City will work with KART on the issue of sharing responsibility on the upkeep of these shelters and incorporate them as part of its Capital Improvements Plan, if necessary.

**C-I-7:** Ensure that new development is designed to make public transit a viable choice for residents. Options include:

-Locate medium-high density development whenever feasible near streets served by public transit; and
-Link neighborhoods to bus stops by continuous sidewalks or pedestrian paths.

Bicycles, Trails, and Pedestrian Circulation

***C-G-3 Guiding Policy***

**C-G-4:** Promote bicycling and walking as alternatives to the automobile.

***C-G-5 Implementing Actions***

**C-I-1:** Implement the Lemoore Bikeway Plan in coordination with the County's Regional Bicycle Plan, which is updated every four years.

**C-I-2:** Establish bicycle lanes, bike routes, and bike paths consistent with the General Plan.
*This would include establishing a new, more specific, Lemoore Bike Map.*

**C-I-3:** Increase bicycle safety by:

-Sweeping and repairing bicycle lanes and paths on a regular basis;
-Ensuring that bikeways are delineated and signed in accordance with Caltrans' standards, and lighting is provided, where needed;
-Providing bicycle paths or lanes on bridges and overpasses;
-Ensuring that all new and improved streets have bicycle-safe drainage grates and are kept free of hazards such as uneven pavement, gravel, and other debris;

-Providing adequate signage and markings warning vehicular traffic of the existence of merging or crossing bicycle traffic where bike routes and paths make transitions into or across roadways;
-Working with the Lemoore Union School districts to promote classes on bicycle safety in the schools; and
-Installing large sidewalks along arterial and median parkway streets so that children may ride safely away from traffic (e.g., Lemoore Avenue and Hanford-Armona Road).

**C-I-8:** Amend the Zoning Ordinance to include standards in all new development for pedestrian circulation including: patterned concrete sidewalks across vehicular streets, crossing signalization, bulb-outs, bicycle parking and lockers integrated with parking areas, and street lighting.

## Thresholds of Significance

To determine whether a proposed project could create a potential CEQA impact, local, state and federal agencies have developed various means by which a project's impacts may be measured and evaluated. Such means can generally be categorized as follows:

- Thresholds of significance adopted by air quality agencies to guide lead agencies in their evaluation of air quality impacts under the CEQA.
- Regulations established by air districts, California ARB and the EPA for the evaluation of stationary sources when applying for Authorities to Construct, Permits to Operate and other permit program requirements (e.g., New Source Review).
- Thresholds utilized to determine if a project would cause or contribute significantly to violations of the ambient air quality standards or other concentration-based limits.
- Regulations applied in areas where severe air quality problems exist.

While the final determination of whether a project is significant is within the purview of the lead agency pursuant to Section 15064(b) of the CEQA Guidelines, the District recommends that its quantitative air pollution thresholds be used to determine the significance of project emissions. If the lead agency finds that the project has the potential to exceed these air pollution thresholds, the project should be considered to have significant air quality impacts. The applicable District thresholds and methodologies are contained under each impact analysis below.

## Impacts and Mitigation Measures

**Impact 3.2-1:** *Would the project conflict with or obstruct implementation of the applicable air quality plan?*

**Less Than Significant Impact.** The CEQA Guidelines indicate that a significant impact would occur if the Project would conflict with or obstruct implementation of the applicable air quality plan. The GAMAQI indicates that projects that do not exceed District regional criteria pollutant emissions quantitative thresholds would not conflict with or obstruct the applicable air quality plan (AQP). An additional criterion regarding the Project's implementation of control measures was assessed to provide further evidence of the Project's consistency with current AQPs. This document proposes the following criteria for determining Project consistency with the current AQPs:

1. Will the project result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQPs? This measure is determined by comparison to the regional and localized thresholds identified by the District for Regional and Local Air Pollutants.

2. Will the project comply with applicable control measures in the AQPs? The primary control measures applicable to development projects is Regulation VIII—Fugitive PM10 Prohibitions and Rule 9510 Indirect Source Review.

**Contribution to Air Quality Violations**

A measure for determining if the Project is consistent with the air quality plans is if the Project would not result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the air quality plans. Regional air quality impacts and attainment of standards are the result of the cumulative impacts of all emission sources within the air basin. Individual projects are generally not large enough to contribute measurably to an existing violation of air quality standards. Therefore, the cumulative impact of the Project is based on its cumulative contribution. Because of the region's nonattainment status for ozone, PM2.5, and PM10—if project-generated emissions of either of the ozone precursor pollutants (ROG and NOX), PM10, or PM2.5 would exceed the District's significance thresholds—then the Project would be considered to contribute to violations of the applicable standards and conflict with the attainment plans.

As discussed in Impact 3.2-2 below, emissions of ROG, NOX, PM10, and PM2.5 associated with the construction and operation of the Project would not exceed the District's significance thresholds. As shown in Impact 3.2-2, the Project would not result in CO hotspots that would violate CO standards. Therefore, the Project would not contribute to air quality violations.

**Compliance with Applicable Control Measures**

The AQP contains a number of control measures, which are enforceable requirements through the adoption of rules and regulations. A description of rules and regulations that apply to this Project is provided below.

**SJVAPCD Rule 9510—Indirect Source Review (ISR)** is a control measure in the 2006 PM10 Plan that requires NOX and PM10 emission reductions from development projects in the San Joaquin Valley. The NOX emission reductions help reduce the secondary formation of PM10 in the atmosphere (primarily ammonium nitrate and ammonium sulfate) and also reduce the formation of ozone. Reductions in directly emitted PM10 reduce particles such as dust, soot, and aerosols. Rule 9510 is also a control measure in the 2016 Plan for the 2008 8-Hour Ozone Standard. Developers of projects subject to Rule 9510 must reduce emissions occurring during construction and operational phases through on-site measures or pay off-site mitigation fees. The Project is required to comply with Rule 9510.

**Regulation VIII—Fugitive PM10 Prohibitions** is a control measure that is one of the main strategies from the 2006 PM10 for reducing the PM10 emissions that are part of fugitive dust. Residential projects over 10 acres are required to file a Dust Control Plan (DCP) containing dust control practices sufficient to comply with Regulation VIII. The Project is required to prepare a DCP to comply with Regulation VIII.

Other control measures that apply to the Project are Rule 4641—Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operation that requires reductions in VOC emissions during paving and Rule 4601—Architectural Coatings that limits the VOC content of all types of paints and coatings sold in the San Joaquin Valley. These measures apply at the point of sale of the asphalt and the coatings, so Project compliance is ensured without additional mitigation measures.

The Project would comply with all applicable SJVAPCD rules and regulations. Therefore, the Project meets this criterion.

Although the Project requires a General Plan Amendment, the City of Lemoore 2030 General Plan includes policies that will help further reduce Project impacts. The applicable measures are listed in Table 3.2-5.

**Table 3.2-5: Consistency with Lemoore 2030 General Plan[24]**

| General Plan Policy | Project Consistency |
|---|---|
| **COS-I-42** Conforming to the SJVAPCD Fugitive Dust Rule, require developers to use best management practices (BMPs) to reduce particulate emission as a condition of approval for subdivision maps, site plans and all grading permits. BMPs include:<br>• During clearing, grading, earth-moving or excavation operations, fugitive dust emissions shall be controlled by regular watering, paving of construction roads, or other dust-preventive measures;<br>• All materials excavated or graded shall be either sufficiently watered or covered by canvas or plastic sheeting to prevent excessive amounts of dust;<br>• All materials transported off-site shall be either sufficiently watered or covered by canvas or plastic sheeting to prevent excessive amounts of dust;<br>• All motorized vehicles shall have their tires watered before exiting a construction site;<br>• The area disturbed by demolition, clearing, grading, earth-moving, or excavation shall be minimized at all times; and<br>• All construction-related equipment shall be maintained in good working order to reduce exhaust. | **Consistent**. All individual projects with the Lacey Area Master Plan are required to submit Dust Control Plans to the SJVAPCD containing BMPs appropriate to the project prior to commencing grading activities. This measure is enforced by the SJVAPCD. |
| **COS-I-43** Enact a wood-burning ordinance compliant with District Rule 4901 that:<br>• Regulates the installation of EPA-certified wood heaters or approved woodburning appliances in new developments or replacements; | **Consistent**. All residential developments will use natural gas fireplaces or have no fireplaces. Under Rule 4901, two woodburning devices can be installed per acre. |

[24] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 75.

| General Plan Policy | Project Consistency |
|---|---|
| • Lists permitted and prohibited fuels; and Describes a "No Burn" policy on days when the air quality is poor. | |
| **COS-I-45** Utilize more plants and trees in public area landscaping, focusing on those that are documented as more efficient pollutant absorbers. | **Consistent**. The project will install trees consistent with the City of Lemoore Landscaping Requirements. |
| **C-I-5** Use traffic calming measures to reduce speeds in existing and future residential areas. Traffic calming measures may include, but are not limited to:<br>• Reducing curb-to-curb pavement widths to the minimum necessary to ensure traffic flow and safety;<br>• Allowing on-street parking where possible;<br>• Providing generous street tree plantings and other vegetation;<br>• Building corner bulb-outs and intersection roundabouts;<br>• Allowing for curvilinear street design; and<br>• Installing, where appropriate, specific traffic calming features, such as bulb-outs and medians. | **Consistent**. Streets included in the project area must comply with Safe Streets requirements. |
| **C-I-7** Ensure that new development is designed to make public transit a viable choice for residents. Options include:<br>• Locate medium-high density development whenever feasible near streets served by public transit; and<br>• Link neighborhoods to bus stops by continuous sidewalks or pedestrian paths. | **Consistent**. The multi-family development projects will be located in the areas likely to be served by transit when service is extended in the future. The project will include sidewalks and pedestrian paths that connect to larger roads that are the likely location of future bus stops. |
| **C-I-2** Establish bicycle lanes, bike routes, and bike paths consistent with the General Plan.<br>**C-I-3** Increase bicycle safety by:<br>• Sweeping and repairing bicycle lanes and paths on a regular basis;<br>• Ensuring that bikeways are delineated and signed in accordance with Caltrans' standards, and lighting is provided, where needed;<br>• Providing bicycle paths or lanes on bridges and overpasses;<br>• Ensuring that all new and improved streets have bicycle-safe drainage grates and are kept free of hazards such as uneven pavement, gravel, and other debris;<br>• Providing adequate signage and markings warning vehicular traffic of the | **Consistent**. Arterials and collectors extended to serve the project will include bike lanes when the roads are constructed to their ultimate width. Road improvements will be constructed to City of Lemoore standards. |

| General Plan Policy | Project Consistency |
|---|---|
| existence of merging or crossing bicycle traffic where bike routes and paths make transitions into or across roadways;<br>• Working with the Lemoore Union School districts to promote classes on bicycle safety in the schools; and<br>• Installing large sidewalks along arterial and median parkway streets so that children may ride safely away from traffic (e.g., Lemoore Avenue and Hanford-Armona Road) | |

The Project is consistent with General Plan policies related to air quality. Therefore, the Project complies with this criterion and would not conflict with or obstruct implementation of the applicable air quality attainment plan.

The Project's emissions are less than significant for all criteria pollutants and would not result in inconsistency with the AQP for this criterion. The Project complies with applicable control measures of the AQP. Therefore, the Project is consistent with the AQP, and the impact would be ***less than significant***. In addition, the project is consistent with City of Lemoore General Plan policies related to air quality that will help further the goals of the AQP.

**Mitigation Measures:**

None are required.

**Impact 3.2-2:** *Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?*

**Less Than Significant Impact.** To result in a less than significant impact, the following criteria must be true:

1. Regional analysis: emissions of nonattainment pollutants must be below the District's regional significance thresholds. This is an approach recommended by the District in its GAMAQI.
2. Summary of projections: the project must be consistent with current air quality attainment plans including control measures and regulations. This is an approach consistent with Section 15130(b) of the CEQA Guidelines.

3. Cumulative health impacts: the project must result in less than significant cumulative health effects from the nonattainment pollutants. This approach correlates the significance of the regional analysis with health effects, consistent with the court decision, *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1219-20.

<u>Regional Emissions</u>

Air pollutant emissions have both regional and localized effects. This analysis assesses the regional effects of the Project's criteria pollutant emissions in comparison to SJVAPCD thresholds of significance for short-term construction activities and long-term operation of the Project. Localized emissions from Project construction and operation are assessed under Impact 3.2-3—Sensitive Receptors using concentration-based thresholds that determine if the Project would result in a localized exceedance of any ambient air quality standards or would make a cumulatively considerable contribution to an existing exceedance.

The primary pollutants of concern during Project construction and operation are ROG, $NO_X$, $PM_{10}$, and $PM_{2.5}$. The District GAMAQI adopted in 2015 contains thresholds for CO, $NO_X$, ROG, $SO_X$, $PM_{10}$, and $PM_{2.5}$.

Ozone is a secondary pollutant that can be formed miles from the source of emissions, through reactions of ROG and $NO_X$ emissions in the presence of sunlight. Therefore, ROG and $NO_X$ are termed ozone precursors. The Air Basin often exceeds the state and national ozone standards. Therefore, if the Project emits a substantial quantity of ozone precursors, the Project may contribute to an exceedance of the ozone standard. The Air Basin also exceeds air quality standards for $PM_{10}$, and $PM_{2.5}$; therefore, substantial Project emissions may contribute to an exceedance for these pollutants. The District's annual emission significance thresholds used for the Project define the substantial contribution for both operational and construction emissions as follows:

- 100 tons per year CO
- 10 tons per year $NO_X$
- 10 tons per year ROG
- 27 tons per year $SO_X$
- 15 tons per year $PM_{10}$
- 15 tons per year $PM_{2.5}$

The proposed Project does not contain sources that would produce substantial quantities of $SO_2$ emissions during construction and operation. Modeling conducted for the Project show that $SO_2$ emissions are well below the District GAMAQI thresholds, as shown in the modeling results contained in Appendix B. No further analysis of $SO_2$ is required.

<u>Construction Emissions</u>

Construction emissions were modeled using the CalEEMod version 2016.3.2. The results of the modeling are presented in Table 3.2-6. The highest emissions that would occur in any year of construction activity were compared with the significance threshold. The emissions reflect compliance with SJVAPCD regulations that apply to construction activities. For assumptions in estimating the emissions, please refer to Section 4, Modeling Parameters and Assumptions. As shown in Table 3.2-6, the emissions are below the significance thresholds in each construction year. Therefore, the emissions are ***less than significant*** on a Project basis.

**Table 3.2-6: Construction Air Pollutant Emissions Summary[25]**

| Year | Emissions (tons per year) | | | | |
|---|---|---|---|---|---|
| | ROG | $NO_X$ | CO | $PM_{10}$ | $PM_{2.5}$ |
| Phase 1 2022 | 0.37 | 3.43 | 3.03 | 0.53 | 0.30 |
| Phase 1 2023 | 0.28 | 2.21 | 2.64 | 0.27 | 0.14 |
| Phase 1 2024 | 0.26 | 2.10 | 2.61 | 0.26 | 0.13 |
| Phase 1 2025 | 1.60 | 0.74 | 1.09 | 0.08 | 0.04 |
| Phase 2 2026 | 0.32 | 2.89 | 2.96 | 0.56 | 0.27 |
| Phase 2 2027 | 0.28 | 2.42 | 2.77 | 0.38 | 0.15 |
| Phase 2 2028 | 0.28 | 2.40 | 2.72 | 0.38 | 0.15 |
| Phase 2 2029 | 1.26 | 0.85 | 1.13 | 0.12 | 0.05 |
| Phase 3 2030 | 0.24 | 1.33 | 2.35 | 0.25 | 0.12 |
| Phase 3 2031 | 0.19 | 1.17 | 2.21 | 0.08 | 0.04 |
| Phase 3 2032 | 0.97 | 0.33 | 0.68 | 0.02 | 0.01 |
| Phase 4 2034 | 0.27 | 1.44 | 2.44 | 0.36 | 0.18 |
| Phase 4 2035 | 0.18 | 1.11 | 2.22 | 0.09 | 0.03 |
| Phase 4 2036 | 0.18 | 1.11 | 0.22 | 0.09 | 0.03 |
| Phase 4 2037 | 1.34 | 0.42 | 1.02 | 0.03 | 0.02 |
| **Total for All Years of Construction** | **8.01** | **23.96** | **30.10** | **3.52** | **1.66** |
| ***Highest Construction Emissions in Any Year*** | ***1.34*** | ***3.43*** | ***3.03*** | ***0.56*** | ***0.30*** |
| Significance threshold (tons/year) | 10 | 10 | 100 | 15 | 15 |
| Exceed threshold—significant impact? | No | No | No | No | No |
| Notes: | | | | | |

[25] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 84.

| |
|---|
| $PM_{10}$ and $PM_{2.5}$ emissions are from the mitigated output to reflect compliance with Regulation VIII—Fugitive $PM_{10}$ Prohibitions.<br>ROG = reactive organic gases $NO_X$ = nitrogen oxides $PM_{10}$ and $PM_{2.5}$ = particulate matter<br>Calculations use unrounded numbers.<br>Source: CalEEMod output (Appendix B). |

## Operational Emissions

Operational emissions occur over the lifetime of the proposed Project and are from two main sources: area sources and motor vehicles, or mobile sources. First occupancy expected in late 2022. Project buildout is expected to occur in approximately 16 years. The apartments and the park are included in Phase 1 and Phase 2. Phase 3 and Phase 4 are only single-family residential. The SJVAPCD considers construction and operational emissions separately when making significance determinations. For assumptions in estimating the emissions, please refer to Section 4 of Appendix B, Modeling Parameters and Assumptions. The emissions modeling results for Project operation are summarized in Table 3.2-7.

As shown in Table 3.2-7, the emissions are below the SJVAPCD significance thresholds prior to application of mitigation measures. The Project emissions include credit for compliance with regulations and Project design features that would reduce Project emissions. The results are presented for the total with each phase modeled separately and at buildout using a single model run for 2038. The emissions in both cases would result in a ***less than significant impact***.

**Table 3.2-7: Operational Air Pollutant Emissions**[26]

| Phase and Year | Emissions (tons per year) | | | | |
|---|---|---|---|---|---|
| | ROG | $NO_X$ | CO | $PM_{10}$ | $PM_{2.5}$ |
| Phase 1 2022 | 2.40 | 2.87 | 10.39 | 1.29 | 0.65 |
| Phase 2 2026 | 1.68 | 1.54 | 5.90 | 1.65 | 0.47 |
| Phase 3 2030 | 1.23 | 0.95 | 3.48 | 1.20 | 0.34 |
| Phase 4 2034 | 1.63 | 1.22 | 4.10 | 1.65 | 0.47 |
| **Total Project Emissions All Phases** | **6.94** | **6.57** | **23.87** | **5.79** | **1.93** |
| **Total Project Emissions Buildout 2038** | **6.33** | **5.28** | **16.94** | **6.86** | **1.94** |
| Significance threshold | 10 | 10 | 100 | 15 | 15 |
| Exceed threshold—significant impact? | No | No | No | No | No |

[26] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 86.

Notes:
ROG = reactive organic gases $NO_X$ = nitrogen oxides $PM_{10}$ and $PM_{2.5}$ = particulate matter
Area source emissions include emissions from natural gas, landscape, and painting.
Source: CalEEMod output (Appendix B).

**Step 2: Plan Approach**

Section 15130(b) of the CEQA Guidelines states the following:

> The following elements are necessary to an adequate discussion of significant cumulative impacts: 1) Either: (A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or (B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact.

In accordance with CEQA Guidelines 15130(b), this analysis of cumulative impacts is based on a summary of projections analysis. The District attainment plans are based on a summary of projections that accounts for projected growth throughout the Air Basin, and the controls needed to achieve ambient air quality standards. This analysis considers the current CEQA Guidelines, which includes the amendments approved by the Natural Resources Agency, effective on December 28, 2018. The Air Basin is in nonattainment or maintenance status for ozone and particulate matter (PM10 and PM2.5), which means that concentrations of those pollutants currently exceed the ambient air quality standards for those pollutants, or that the standards have recently been attained in the case of pollutants with maintenance status. When concentrations of ozone, PM10, or PM2.5 exceed the ambient air quality standard, then those sensitive to air pollution (such as children, the elderly, and the infirm) could experience health effects such as: decrease of pulmonary function and localized lung edema in humans and animals; increased mortality risk; and risk to public health, implied by altered connective tissue metabolism, altered pulmonary morphology in animals after long-term exposures, and pulmonary function decrements in chronically exposed humans. See Section 2.3—Existing Air Quality Conditions for additional correlation of the health impacts with the existing pollutant concentrations experienced in the Lemoore area.

Under the CEQA Guidelines, cumulative impacts may be analyzed using other plans that evaluate relevant cumulative effects. The geographic scope for cumulative criteria pollution from air quality impacts is the Air Basin because that is the area in which the air pollutants generated by the sources within the Air Basin circulate and are often trapped. The SJVAPCD is required to

prepare and maintain air quality attainment plans and a State Implementation Plan to document the strategies and measures to be undertaken to reach attainment of ambient air quality standards. While the SJVAPCD does not have authority over land use decisions, it is recognized that changes in land use and circulation planning would help the Air Basin achieve clean air mandates. The District evaluated emissions from land uses and transportation in the entire Air Basin when it developed its attainment plans. Emission inventories used to predict attainment of NAAQS must be based on the latest planning assumptions for mobile sources.

In accordance with CEQA Guidelines Section 15064, subdivision (h)(3), a lead agency may determine that a Project's incremental contribution to a cumulative effect is not cumulatively considerable if the Project complies with the requirements in a previously approved plan or mitigation program.

The history and development of the SJVAPCD's current Ozone Attainment Plan is described in Appendix B. The 2007 8-Hour Ozone Plan contains measures to achieve reductions in emissions of ozone precursors and sets plans towards attainment of ambient ozone standards by 2023. The 2012 PM2.5 Plan and the 2015 PM2.5 Plan for the 1997 PM2.5 Standard require fewer NOX reductions to attain the PM2.5 standard than the Ozone Plan, so the Ozone Plan is considered the applicable plan for reductions of the ozone precursors NOX and ROG. The 2012 PM2.5 Plan requires reductions in directly emitted PM2.5 from combustion sources, such as diesel engines and fireplaces, and from fugitive dust to attain the ambient standard and is the applicable plan for PM2.5 emissions. PM2.5 is also formed in secondary reactions in the atmosphere involving NOX and ammonia to form nitrate particles. Reductions in NOX required for ozone attainment are also sufficient for PM2.5 attainment. As discussed in Impact 3.2-1, the Project is consistent with all applicable control measures in the air quality attainment plans. The Project would comply with any District rules and regulations that may pertain to implementation of the AQPs. Therefore, impacts would be ***less than significant*** with regard to compliance with applicable rules and regulations.

This Project does not exceed SJVAPCD thresholds and will reduce its cumulative impact through compliance with Rule 9510; therefore, the Project is considered ***less than significant*** for this criterion.

**Project Health Impacts**

In the 5th District Court of Appeal case Sierra Club v. County of Fresno (Friant Ranch, L.P.), the Court found the Project EIR deficient because it did not identify specific health-related effects resulting from the estimated amount of pollutants generated by the project. The ruling stated that

the EIR should give a "sense of the nature and magnitude of the 'health and safety problems' caused by a project's air pollution. The EIR should translate the emission numbers into adverse impacts or to understand why such translation is not possible at this time (and what limited translation is, in fact, possible)."

The standard measure of the severity of impact is the concentration of pollutant in the atmosphere compared to the ambient air quality standard for the pollutant for a specified period of time. The severity of the impact increases with the concentration and the amount of time that people are exposed to the pollutant. The change in health impacts with concentration is described in Table 3 and Table 4 of Appendix B using the EPA's Air Quality Index. The pollutants of concern in the Friant Ranch ruling were regional criteria pollutants ozone, and PM10. It is important to note that the potential for localized impacts can be addressed through dispersion modeling. The SJVAPCD includes screening criteria that if exceeded would require dispersion modeling to determine if Project emissions would result in a significant health impact. For this Project, no significant localized health impacts would occur. Regional pollutants require more complex modeling as described below.

Ozone concentrations are estimated using regional photochemical models because ozone formation is subject to temperature, inversion strength, sunlight, emissions transport over long distances, dispersion, and the regional nature of the precursor emissions. The emissions from individual projects are too small to produce a measurable change in ozone concentrations—it is the cumulative contribution of emissions from existing and new development that is accounted for in the photochemical model. Ozone concentrations vary widely throughout the day and year even with the same amount of daily emissions. The SJVAPCD indicated in an Amicus Brief on Friant Ranch that running the photochemical model with just Friant Ranch emissions (109.5 tons/year NOX) is not likely to yield valid information given the relative scale involved. A copy of the SJVAPCD brief is included in Appendix B. The NOX inventory for the San Joaquin Valley is 224 tons per day in 2019 or 81,760 tons per year. Friant Ranch would result in 0.13 percent increase in NOX emissions. A project emitting at the SJVAPCD CEQA threshold of 10 tons per year would result in a 0.01 percent increase in NOX emissions. Most project emissions are generated by motor vehicle travel distributed on regional roadways miles from the project site, and these emissions are not conducive to project-level concentration-based modeling.

Emissions throughout the San Joaquin Valley are projected to markedly decline in the coming decade. The SJVAPCD 2016 Ozone Plan predicts NOX emissions will decline to 103 tons per day by 2029 or 54 percent from 2019 levels through implementation of control measures included in the plan. This means that ozone health impacts to residents of the San Joaquin Valley will be

lower than currently experienced and most areas of the San Joaquin Valley will have attained ozone air quality standards. The plan accounts for growth in population at rates projected by the State of California for the San Joaquin Valley, so only cumulative projects that would exceed regional growth projections would potentially delay attainment and prolong the time and the number of people would experience health impacts. It is unlikely that anyone would experience greater impacts from regional emissions than currently occur. The federal transportation conformity regulation provides a means of ensuring growth in emissions does not exceed emission budgets for each County. Regional Transportation Plans and Regional Transportation Improvement Plans must provide a conformity analysis based on the latest planning assumptions that demonstrates that budgets will not be exceeded. If budgets are exceeded, the San Joaquin Valley may be subject to Clean Air Act sanctions until the deficiency is addressed.

Particulate emission impacts can be localized and regional. Particulates can be directly emitted and can be formed in the atmosphere with chemical reactions. Small directly emitted particles such as diesel emissions and other combustion emissions can remain in the atmosphere for a long time and can be transported over long distances. Large particles such as fugitive dust tend to be deposited a short distance from where emitted but can also travel long distances during periods of high winds. Particulates can be washed out of the atmosphere by rain and deposited on surfaces. Secondary particulates formed in the atmosphere such as ammonium nitrate require NOX and ammonia, and they require low inversion levels and certain ranges of temperature and humidity to result in substantial concentrations. These complications make modeling Project particulate emissions to determine concentration feasible only for directly emitted particles at receptor locations close to the Project site. Regional particulate concentrations are modeled using a gridded inventory (emissions in tons/day are placed a 4-kilometer, three-dimensional grid to spatially allocate the emissions geographically and vertically in the atmosphere) and an atmospheric chemistry component to simulate the chemical reactions. The model uses relative reduction factors to determine the amount of reductions of each PM component will be needed to attain the air quality standards on the days with the conditions most favorable to high particulate concentrations. A small project would not produce sufficient emissions to determine a project’s individual contribution to the particulate concentration.

**Step 3: Cumulative Health Impacts**

The Air Basin is in nonattainment for ozone, PM10 (State only), and PM2.5, which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to protect public health, including the health of sensitive individuals (such as children, the elderly, and the infirm). Therefore, when the concentration of

those pollutants exceeds the standard, it is likely that some sensitive individuals in the population would experience health effects that were described in Table 3.2-1. However, the health effects are a factor of the dose-response curve. Concentration of the pollutant in the air (dose), the length of time exposed, and the response of the individual are factors involved in the severity and nature of health impacts. If a significant health impact results from project emissions, it does not mean that 100 percent of the population would experience health effects. Table 3.2-2, Table 3.2-3, and Table 3.2-4 relate the pollutant concentration experienced by residents using air quality data for the nearest air monitoring station to the health impacts ascribed to those concentrations by the EPA Air Quality Index. This provides a more detailed look at the actual impacts currently experienced by area residents.

Since the Air Basin is nonattainment for ozone, PM10, and PM2.5, it is considered to have an existing significant cumulative health impact without the Project. When this occurs, the analysis considers whether the Project's contribution to the existing violation of air quality standards is cumulatively considerable. The SJVAPCD regional thresholds for NOX, VOC, PM10, or PM2.5 are applied as cumulative contribution thresholds. Projects that exceed the regional thresholds would have a cumulatively considerable health impact. As shown in Table 3.2-6 and Table 3.2-7, the regional analysis of construction and operational emissions indicates that the Project would not exceed the SJVAPCD's significance thresholds and the Project is consistent with the applicable Air Quality Plan.

The SJVAPCD Air Quality Attainment Plans predict that nonattainment pollutant emissions will continue to decline each year as regulations adopted to reduce these emissions are implemented, accounting for growth projected for the region. Therefore, the cumulative health impact will also decline even with the Project's emission contribution. The impact would be ***less than significant***.

**Mitigation Measures**

None are required.

**Impact 3.2-3:** *Would the project expose sensitive receptors to substantial pollutant concentrations?*

**Less Than Significant Impact.** Those who are sensitive to air pollution include children, the elderly, and persons with pre-existing respiratory or cardiovascular illness. The District considers a sensitive receptor a location that houses or attracts children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Examples of sensitive receptors include hospitals, residences, convalescent facilities, and schools. The closest off-site

sensitive receptors are existing residences located adjacent to the Project site to the north, east, south, and west. As a residential land use development Project, proposed residences included as part of the Project would be considered sensitive receptors once occupied.

**Off-site Sensitive Receptors**

Impacts to receptors located outside the Project boundaries would occur primarily during Project construction. Construction emissions commencing with the year 2022 and continue until Project buildout. Construction activities are expected to occur over multiple years as the subdivision is gradually built out; however, most emissions are expected to occur during the initial site preparation and grading activities and to a lesser extent during ground-up construction. For criteria pollutants, impacts to receptors located outside of the Project are based on emissions during the highest emissions during any construction year. As shown in Table 3.2-8 and Table 3.2-9, emissions generated from construction and operation of the Project are less than SJVAPCD screening criteria. Therefore, this impact would be ***less than significant***.

**On-site Sensitive Receptors**

The Project is not a significant source of TAC emissions. Construction activities produce short-term emissions that would not contribute substantially to cancer risk, which is estimated on a 70-year exposure period.

**Construction: ROG**

Reactive Organic Gases (ROG) is emitted during the application of architectural coatings (painting). The amount emitted is dependent on the amount of ROG (or VOC) in the paint. ROG emissions are typically an indoor air quality health hazard concern rather than an outdoor air quality health hazard concern. Therefore, exposure to ROG during architectural coatings is a less than significant health impact.

There are three types of asphalt that are typically used in paving: asphalt cements, cutback asphalts, and emulsified asphalts. However, SJVAPCD Rule 4641 prohibits the use of the following types of asphalt: rapid cure cutback asphalt; medium cure cutback asphalt; slow cure asphalt that contains more than one-half (0.5) percent of organic compounds that evaporate at 500 degrees Fahrenheit (°F) or lower; and emulsified asphalt containing organic compounds, in excess of 3 percent by volume, that evaporate at 500°F or lower. An exception to this is medium cure asphalt when the National Weather Service official forecast of the high temperature for the 24-hour period following application is below 50°F.

The acute (short-term) health effects from worker direct exposure to asphalt fumes include irritation of the eyes, nose, and throat. Other effects include respiratory tract symptoms and pulmonary function changes. The studies were based on occupational exposure of fumes. Residents are not in the immediate vicinity of the fumes; therefore, they would not be subjected to concentrations high enough to evoke a negative response. In addition, the restrictions that are placed on asphalt in the San Joaquin Valley reduce ROG emissions from asphalt and exposure. The impact to nearby sensitive receptors from ROG during construction would be ***less than significant***.

**Localized Pollutant Screening Analysis**

Emissions occurring at or near the Project have the potential to create a localized impact, also referred to as an air pollutant hotspot. Localized emissions are considered significant if, when combined with background emissions, they would result in exceedance of any health-based air quality standard. The impact from localized pollutants is based on the impact to the nearest sensitive receptor.

The SJVAPCD's GAMAQI includes screening thresholds for identifying projects that need detailed analysis for localized impacts. Projects with on-site emission increases from construction activities or operational activities that exceed the 100 pounds per day screening level of any criteria pollutant after compliance with Rule 9510 and implementation of all enforceable mitigation measures would require preparation of an ambient air quality analysis. The criteria pollutants of concern for localized impact in the SJVAB are PM10, PM2.5, NOX, and CO. There is no localized emission standard for ROG and most types of ROG are not toxic and have no health-based standard; however, ROG was included for informational purposes only.

**Maximum Daily Construction Emissions**

The highest daily emissions occur during Project grading activities except for ROG emissions, which are highest during application of architectural coatings during each phase. The results of the construction screening analysis are presented in Table 3.2-8. The Project would not exceed SJVAPCD thresholds for localized criteria pollutant emissions; therefore, this impact is considered ***less than significant***.

**Table 3.2-8: Maximum Daily Air Pollutant Emissions during Construction**[27]

| Maximum Daily Emissions by Phase | Emissions (pounds per day) | | | | |
|---|---|---|---|---|---|
| | ROG | $NO_X$ | CO | $PM_{10}$ | $PM_{2.5}$ |
| Phase 1 | 55.00 | 38.89 | 29.66 | 9.89 | 5.99 |
| Phase 2 | 42.35 | 27.98 | 26.78 | 9.37 | 5.51 |
| Phase 3 | 52.44 | 13.87 | 23.36 | 8.72 | 4.95 |
| Phase 4 | 45.93 | 13.86 | 23.29 | 8.71 | 4.95 |
| **Highest Emissions in Any Year** | **55.00** | **38.89** | **29.66** | **9.89** | **5.99** |
| Screening Thresholds | 100 | 100 | 100 | 100 | 100 |
| Exceeds Threshold (Yes or No) | No | No | No | No | No |

Notes:
$NO_X$ = nitrogen oxides CO = carbon monoxide $PM_{10}$ and $PM_{2.5}$ = particulate matter
N/A = Not applicable
Emissions shown are from the summer model output except for $NO_x$, which is higher during the winter. There is no ambient air quality standard for ROG.
Source: CalEEMod output (Appendix B).

### Maximum Daily Operational Emissions

An analysis of maximum daily emissions during operation was conducted to determine if emissions would exceed 100 pounds per day for any pollutant of concern. The maximum daily operational emissions would occur at Project buildout, which is assumed to occur by 2038. Operational emissions include emissions generated on-site by area sources such as natural gas combustion and landscape maintenance, and off-site by motor vehicles accessing the Project. Most motor vehicle emissions would occur distant from the site and would not contribute to a violation of ambient air quality standards; therefore, only emissions from vehicles operating within 0.5 mile of the site were included in the assessment. The results of the screening analysis are presented in Table 3.2-9.

[27] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 92.

**Table 3.2-9: Maximum Daily Air Pollutant Emissions during Operations**[28]

| Maximum Daily Emissions per Source Category | Emissions (pounds per day) | | | | |
|---|---|---|---|---|---|
| | **ROG** | **$NO_X$** | **CO** | **$PM_{10}$** | **$PM_{2.5}$** |
| Area | 30.76 | 7.56 | 64.66 | 0.90 | 0.90 |
| Energy | 0.48 | 4.08 | 1.74 | 0.33 | 0.33 |
| Mobile | 0.47 | 1.64 | 4.92 | 2.73 | 0.74 |
| **Total** | **31.70** | **13.29** | **71.31** | **3.96** | **1.96** |
| Screening threshold | 100 | 100 | 100 | 100 | 100 |
| Exceed screening threshold? | No | No | No | No | No |

Notes:
$NO_X$ = nitrogen oxides CO = carbon monoxide $PM_{10}$ and $PM_{2.5}$ = particulate matter
N/A = Not applicable
Emissions shown are from the summer model output. There is no ambient air quality standard for ROG.
Source: CalEEMod output (Appendix B).

The Project would not exceed SJVAPCD screening thresholds for localized operational criteria pollutant impacts; therefore, the Project's localized criteria pollutant impacts would be ***less than significant.***

**Operation: ROG**

During operation, ROG would be emitted primarily from motor vehicles. Direct exposure to ROG from Project motor vehicles would not result in health effects, because the ROG would be distributed across miles and miles of roadway and in the air. The concentrations would not be great enough to result in direct health effects.

**Operation: PM10, PM2.5, CO, NO2**

As shown in Table 3.2-9, localized emissions of PM10, PM2.5, CO, and NO2 would not exceed the SJVAPCD screening thresholds at full Project buildout. Residential development is an insignificant source of these pollutants, except for projects that allow woodburning devices that emit PM10, PM2.5 in wood smoke. The Project will include only natural gas-fueled fireplaces and inserts that are insignificant sources of PM2.5 and PM10. Therefore, the Project would not expose sensitive receptors to substantial criteria air pollutant concentrations during operation.

[28] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 98.

**Carbon Monoxide Hot Spot Analysis**

Localized high levels of CO are associated with traffic congestion and idling or slow-moving vehicles. The SJVAPCD provides screening criteria to determine when to quantify local CO concentrations based on impacts to the level of service (LOS) of intersections in the Project vicinity.

Construction of the Project would result in minor increases in traffic for the surrounding road network for the duration of construction. Motor vehicles accessing the site when it becomes operational would result in a minor increase in daily trips that would not substantially reduce the LOS on roads serving the site. The highest background 8-hour average CO concentration during the latest year it was monitored is 2.06 ppm, which is 78 percent lower than the CAAQS of 9.0 ppm or the NAAQS of 9 ppm.

The SJVAPCD screening threshold for CO impacts is triggered when LOS on one or more streets or at one or more intersections in the Project vicinity will be reduced to LOS E or F, or the Project will substantially worsen an already existing LOS F on one or more streets or at one or more intersections in the Project vicinity. No intersections in the vicinity of the Project vicinity currently have an LOS of E or F and the Project traffic study indicates that no intersections would operate at LOS E or F with the construction of intersection improvements required of the Project. CO emissions are predicted to continue to decline as old vehicles are retired and cleaner new motor vehicles take their place. Therefore, no CO hotspot modeling is required for the Project.

**Construction: Toxic Air Contaminants**

Project construction would involve the use of diesel-fueled vehicles and equipment that emit DPM, which is considered a TAC. The SJVAPCD's latest threshold of significance for TAC emissions is an increase in cancer risk for the maximally exposed individual of 20 in a million (formerly 10 in a million). The SJVAPCD's 2015 GAMAQI does not currently recommend analysis of TAC emissions from Project construction activities, but instead focuses on projects with operational emissions that would expose sensitive receptors over a typical lifetime of 70 years. Residential projects produce limited amounts of TAC emissions during operation and thus have not been subject to Project TAC analysis. Most emissions from construction activities occur during the grading and site preparation phases that occur over the first three months of construction of individual tracts and do not overlap with Project operations. Limited amounts of diesel equipment are used during ground-up construction of individual houses that occurs during the majority of the construction schedule when some units may be occupied. Construction equipment fleet operators are subject to ARB's In Use Offroad Equipment Fleet Regulation, which requires

the use of increasing amounts of lower-emitting equipment that will help to ensure that risk would not exceed SJVAPCD thresholds.

Construction phase risks would be considered acute health risks as opposed to cancer risks, which are long-term. The Office of Environmental Health Hazard Assessment (OEHHA) has yet to define acute risk factors for diesel particulates that would allow the calculation of a hazards risk index; thus, evaluation of this impact would be speculative, and no further discussion is necessary.

**Operation: Toxic Air Contaminants**

The ARB Air Quality and Land Use Handbook contains recommendations that will "help keep California's children and other vulnerable populations out of harm's way with respect to nearby sources of air pollution" (ARB 2005), including recommendations for distances between sensitive receptors and certain land uses. In the California Building Industry Association v. Bay Area Air Quality Management District, 62 Cal.4th 369 (2015) (Case No. S213478) the California Supreme Court held that "agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future users or residents. But when a proposed project risks exacerbating those environmental hazards or conditions that already exist, an agency must analyze the potential impact of such hazards on future residents or users. In those specific instances, it is the project's impact on the environment—and not the environment's impact on the project—that compels an evaluation of how future residents or users could be affected by exacerbated conditions." Although the Court ruled that impacts from the existing environment on projects are not required to be addressed under CEQA, land uses such as gasoline stations, dry cleaners, distribution centers, and auto body shops can expose residents to high levels of TAC emissions if they are close to the Project site. Information regarding the location of existing TAC sources is provided for disclosure purposes only and not as a measure of the Project's significance under CEQA.

Consistency with these recommendations is assessed as follows:

- Heavily traveled roads. ARB recommends avoiding new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day. Epidemiological studies indicate that the distance from the roadway and truck traffic densities were key factors in the correlation of health effects, particularly in children. The Project is located at the northern edge of the City of Lemoore in an area that is currently rural with limited existing traffic. Traffic volumes on roads near the Project will be a small fraction of the amounts recommended by ARB. Therefore, no roads serving the Project would exceed this criterion.

- Distribution centers. ARB also recommends avoiding siting new sensitive land uses within 1,000 feet of a distribution center. The Project is not located within 1,000 feet of a distribution center.

- Fueling stations. ARB recommends avoiding new sensitive land uses within 300 feet of a large fueling station (a facility with a throughput of 3.6 million gallons per year or greater). ARB recommends a 50-foot separation is recommended for typical gas dispensing facilities. The nearest gas station is located at 1110 N. Lemoore Avenue, approximately 0.49 mile south of the Project site.

- Dry cleaning operations. ARB recommends avoiding siting new sensitive land uses within 300 feet of any dry-cleaning operation that uses perchloroethylene. For operations with two or more machines, ARB recommends a buffer of 500 feet. For operations with three or more machines, ARB recommends consultation with the local air district. The nearest dry-cleaning operation is approximately 0.52 mile south of the Project site at 111 E. Hanford-Armona Road.

- Auto body shops. Auto body shops have the potential to emit TACs related to painting. The nearest auto body shop is located at 4113 E. Street, 1.2 miles south of the Project site, which is beyond the distance that would result in a measurable impact.

**Valley Fever**

Valley fever, or coccidioidomycosis, is an infection caused by inhalation of the spores of the fungus, *Coccidioides immitis* (*C. immitis*). The spores live in soil and can live for an extended time in harsh environmental conditions. Activities or conditions that increase the amount of fugitive dust contribute to greater exposure, and they include dust storms, grading, and recreational off-road activities.

The San Joaquin Valley is considered an endemic area for Valley fever. By geographic region, hospitalizations for Valley fever in the San Joaquin Valley increased from 230 (6.9 per 100,000 population) in 2000 to 701 (17.7 per 100,000 population) in 2007. Within the region, Kern County reported the highest hospitalization rates, increasing from 121 (18.2 per 100,000 population) in 2000 to 285 (34.9 per 100,000 population) in 2007, and peaking in 2005 at 353 hospitalizations (45.8 per 100,000 population). The Centers for Disease Control and Prevention indicates that 752 of the 8,657 persons (8.7 percent) hospitalized in California between 2000 and 2007 for Valley fever died (CDC 2009). California experienced 6,880 new cases of Valley fever in 2019. A total of 164 Valley fever cases were reported in Kings County in 2019 (CDPH 2020).

The distribution of *C. immitis* within endemic areas is not uniform and growth sites are commonly small (a few tens of meters) and widely scattered. Known sites appear to have some ecological factors in common suggesting that certain physical, chemical, and biological conditions are more favorable for *C. immitis* growth. Avoidance, when possible, of sites favorable for the occurrence of *C. immitis* is a prudent risk management strategy. Listed below are ecologic factors and sites favorable for the occurrence of *C. immitis*:

1) Rodent burrows (often a favorable site for *C. immitis*, perhaps because temperatures are more moderate and humidity higher than on the ground surface).
2) Old (prehistoric) Indian campsites near fire pits.
3) Areas with sparse vegetation and alkaline soils.
4) Areas with high salinity soils.
5) Areas adjacent to arroyos (where residual moisture may be available).
6) Packrat middens.
7) Upper 30 centimeters of the soil horizon, especially in virgin undisturbed soils.
8) Sandy, well-aerated soil with relatively high water-holding capacities.

Sites within endemic areas less favorable for the occurrence of *C. immitis* include:

1) Cultivated fields.
2) Heavily vegetated areas (e.g., grassy lawns).
3) Higher elevations (above 7,000 feet).
4) Areas where commercial fertilizers (e.g., ammonium sulfate) have been applied.
5) Areas that are continually wet.
6) Paved (asphalt or concrete) or oiled areas.
7) Soils containing abundant microorganisms.
8) Heavily urbanized areas where there is little undisturbed virgin soil (USGS 2000).

The Project site is situated in a city growth area. The Project includes urbanization of a site that was formerly used for agricultural purposes. Therefore, implementation of the Project would have a low probability of the site having *C. immitis* growth sites and exposure to the spores from disturbed soil.

Construction activities would generate fugitive dust that could contain *C. immitis* spores. However, the Project will minimize the generation of fugitive dust during construction activities by complying with the District's Regulation VIII and with Rule 8021 Section 6.3, which requires applicants to develop, prepare, submit, obtain approval of, and implement a Dust Control Plan to reduce fugitive dust impacts to less than significant for all construction phases of the Project, which would also control the release of the *Coccidioides immitis* fungus from construction activities. Therefore, this regulation, combined with the relatively low probability of the presence of *C. immitis* spores, would reduce Valley fever impacts to a ***less than significant.***

During operations, dust emissions are anticipated to be negligible, because most of the Project area would be developed by buildings, pavement, and landscaped areas. This condition would preclude the possibility of the Project from providing habitat suitable for *C. immitis* spores and for generating fugitive dust that may contribute to Valley fever exposure. Impacts would be ***less than significant.***

**Naturally Occurring Asbestos**

According to a map of areas where naturally occurring asbestos in California are likely to occur (U.S. Geological Survey 2011), there are no such areas in the Project area. Therefore, development of the Project is not anticipated to expose receptors to naturally occurring asbestos. Impacts would be less than significant.

In summary, the Project would not exceed SJVAPCD localized emission daily screening levels for any criteria pollutant. The Project is not a significant source of TAC emissions during construction or operation. The Project is not in an area with suitable habitat for Valley fever spores and is not in an area known to have naturally occurring asbestos. Therefore, the Project would not result in significant impacts to sensitive receptors.

**Mitigation Measures**

None Required.

**Impact 3.2-4:** *Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?*

**Less Than Significant.** Odor impacts on residential areas and other sensitive receptors, such as hospitals, day-care centers, schools, etc. warrant the closest scrutiny, but consideration should also be given to other land uses where people may congregate, such as recreational facilities, worksites, and commercial areas.

Two situations create a potential for odor impact. The first occurs when a new odor source is located near an existing sensitive receptor. The second occurs when a new sensitive receptor locates near an existing source of odor. According to the CBIA v. BAAQMD ruling, impacts of existing sources of odors on the Project are not subject to CEQA review. Therefore, the analysis to determine if the Project would locate new sensitive receptors near an existing source of odor is provided for information only. The District has determined the common land use types that are known to produce odors in the Air Basin. These types are shown in Table 3.2-10.

**Table 3.2-10**
**Screening Levels for Potential Odor Sources[29]**

| Odor Generator | Screening Distance |
|---|---|
| Wastewater Treatment Facilities | 2 miles |
| Sanitary Landfill | 1 mile |
| Transfer Station | 1 mile |
| Composting Facility | 1 mile |
| Petroleum Refinery | 2 miles |
| Asphalt Batch Plant | 1 mile |
| Chemical Manufacturing | 1 mile |
| Fiberglass Manufacturing | 1 mile |
| Painting/Coating Operations (e.g., auto body shop) | 1 mile |
| Food Processing Facility | 1 mile |
| Feed Lot/Dairy | 1 mile |
| Rendering Plant | 1 mile |

According to the SJVAPCD GAMAQI, analysis of potential odor impacts should be conducted for the following two situations:

[29] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 98.

- Generators: projects that would potentially generate odorous emissions proposed to locate near existing sensitive receptors or other land uses where people may congregate, and

- Receivers: residential or other sensitive receptor projects or other projects built for the intent of attracting people located near existing odor sources.

**Project Analysis**

***Project as a Generator***

Land uses that are typically identified as sources of objectionable odors include landfills, transfer stations, sewage treatment plants, wastewater pump stations, composting facilities, feed lots, coffee roasters, asphalt batch plants, and rendering plants. The Project would not engage in any of these activities. Therefore, the Project would not be considered a generator of objectionable odors during operations.

During construction, the various diesel-powered vehicles and equipment in use on-site would create localized odors. These odors would be temporary and would not likely be noticeable for extended periods of time beyond the Project's site boundaries. The potential for diesel odor impacts would therefore be ***less than significant***.

***Project as a Receiver***

With the CBIA v. BAAQMD ruling, analysis of odor impacts on receivers is not required for CEQA compliance. Therefore, the following analysis is provided for information only.

As a residential development, the Project has the potential to place sensitive receptors near existing odor sources. Review of the area near the Project site found no major odor-generating sources (as listed in Table 3.2-10) within screening distance of the site. Therefore, the uses in the vicinity of the Project would not cause substantial odor impacts to the Project.

**Mitigation Measures**

None Required.

**Cumulative Impacts:**

**Less Than Cumulatively Considerable.** The geographical area for considering cumulative impacts to air quality resources is the San Joaquin Valley Air Basin. Although the proposed Project would generate emissions, as discussed in the previous section, air quality impacts due to construction and operational emissions would fall below established significant thresholds.

The proposed Project is located in a rural area, immediately north of the City of Lemoore, which has other stationary or mobile emission sources. However, as discussed above, emissions of ROG, NOX, PM10, and PM2.5 associated with the construction and operation of the Project would not exceed the District's significance thresholds. The Project would not result in CO hotspots that would violate CO standards. Therefore, the emissions from the proposed Project operations are not expected to be cumulatively significant. As such, cumulative impacts are considered ***less than cumulatively considerable***.

# 3.3 Biological Resources

This section of the DEIR addresses the biological resources present within the proposed Project area. The section includes a discussion of the special-status species that may potentially occur within the proposed Project area as well as any sensitive habitats in the area. It also recognizes the potential impacts of implementing the proposed Project on such resources and identifies mitigation measures, where appropriate. The information and analysis presented in this Section are based on the desktop review and reconnaissance site survey conducted by Colibri Ecological Consulting, LLC (Colibri). The *Biological Resource Evaluation* in its entirety is provided in Appendix C.

## Environmental Setting

The Project site is within a region with a Mediterranean climate of hot summers and mild, wet winters. The site is currently characterized as dry open valley bottom, now utilized for agricultural purposes. Specifically, the site is in active cultivation of alfalfa. It was bordered by a walnut orchard to the east, mixed agricultural fields to the north and west (Figure 2), and a suburban development to the south. An unnamed irrigation ditch, which was dry at the time of the survey, bordered the southeast corner of the Project site. A slightly elevated dirt road running north-south bisected the Project site.

Project site topography is relatively flat, varying in elevation from 212 to 230 feet above mean sea level, with the lowest elevation occurring along the northern boundary of the site and the highest elevation occurring along the most southeastern portion. The Project site is underlain by a mix of Nord complex and Whitewolf coarse sandy loam.[1]

## Regulatory Setting

<u>Federal Regulations</u>

*Federal Migratory Bird Treaty Act of 1918*

The Migratory Bird Treaty Act (16 U.S.C. 704) (MBTA) makes it unlawful to “take” (kill, harm, harass, etc.) any migratory bird listed in 50 Code of Federal Regulations 10, including their nests,

[1] Biological Resource Evaluation for the Lemoore Residential Development Project. Prepared by Colibri Ecological Consulting, LLC. December 2020. Page 11.

eggs, or products. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, and many other species.

*Federal Endangered Species Act of 1973*

Section 3 of the federal Endangered Species Act (ESA) defines an endangered species as any species or subspecies "in danger of extinction throughout all or a significant portion of its range." A threatened species is defined as any species or subspecies of fish, wildlife, or plants "likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." Threatened or endangered species and their critical habitat are designated through publication of a final rule in the Federal Register. Designated endangered and threatened animal species are fully protected from "take" unless an applicant has an incidental take permit issued by the USFWS under Section 10 or incidental take statement issued under Section 7 of the ESA. A take is defined as the killing, capturing, or harassing of a species. Proposed endangered or threatened species, or their critical habitats, are those for which a proposed regulation, but no final rule, has been published in the Federal Register.

*Federal Clean Water Act (USC, Title 33, Sections 1251 through 1376)*

The federal Clean Water Act (CWA) provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. Section 401 requires a project proponent for a federal license or permit that allows activities resulting in a discharge to waters of the U.S. to obtain state certification, thereby ensuring that the discharge will comply with provisions of the CWA. The RWQCB administers the certification program in California. Section 402 establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into waters of the U.S. Section 404 establishes a permit program administered by USACE that regulates the discharge of dredged or fill material into waters of the U.S., including wetlands. USACE implementing regulations are found at CFR, Title 33, Sections 320 and 330. Guidelines for implementation are referred to as the Section 404(b)(1) Guidelines, which were developed by the U.S. Environmental Protection Agency (EPA) in conjunction with USACE (40 CFR 230). The guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

State of California Regulations

*California Endangered Species Act*

The California Endangered Species Act (CESA) declares that deserving plant or animal species will be given protection by the State because they are of ecological, educational, historical, recreational, aesthetic, economic, and scientific value to the people of the State. CESA establishes that it is State policy to conserve, protect, restore, and enhance endangered species and their habitats. Under State law, plant and animal species may be formally designated as rare, threatened, or endangered through official listing by the California Fish & Game Commission. Listed species are given greater attention during the land use planning process by local governments, public agencies, including the California Department of Fish & Wildlife (CDFW) and landowners than are species that have not been listed.

On private property, endangered plants may also be protected by the Native Plant Protection Act (NPPA) of 1977. Threatened plants are protected by CESA, and rare plants are protected by the NPPA. However, CESA authorizes that "Private entities may take plant species listed as endangered or threatened under the ESA and CESA through a Federal incidental take permit issued pursuant to Section 10 of the ESA, if the CDFG certifies that the incidental take statement or incidental take permit is consistent with CESA."

In addition, the California Environmental Quality Act (CEQA) requires disclosure of any potential impacts on listed species and alternatives or mitigation that would reduce those impacts.

*California Environmental Quality Act—Treatment of Listed Plant and Animal Species*

ESA and CESA protect only those species formally listed as threatened or endangered (or rare in the case of the State list). Section 15380 of the CEQA Guidelines independently defines "endangered" species of plants or animals as those whose survival and reproduction in the wild are in immediate jeopardy and "rare" species as those who are in such low numbers that they could become endangered if their environment worsens. Therefore, a project normally will have a significant effect on the environment if it will substantially affect a rare or endangered species of animal or plant or the habitat of the species. The significance of impacts to a species under CEQA must be based on analyzing actual rarity and threat of extinction despite legal status or lack thereof.

*Section 1602 of the California Fish and Game Code*

Streambeds and other drainages that occur within the area are subject to regulation by the CDFW. Please note that although the agency is now called the California Department of Fish & Wildlife, the State Code is still named the California Department of Fish and Game (CDFG) Code. For purposes of this document, these terms are interchangeable. The CDFW considers most drainages to be "streambeds" unless it can be demonstrated otherwise. A stream is defined as a body of water that flows at least periodically or intermittently through a bed or channel with banks and supports fish or other aquatic life. This includes watercourses having a surface or sub-surface flow that supports, or has supported, riparian vegetation. CDFW jurisdiction typically extends to the edge of the riparian canopy, and therefore, usually encompasses a larger area than U.S. Army Corps jurisdiction.

*Regional Water Quality Control Board- Central*

Under Section 401 of the CWA, the RWQCB must certify that actions receiving authorization under Section 404 of the CWA also meet State water quality standards. The RWQCB also regulates waters of the State under the Porter-Cologne Act Water Quality Control Act (Porter Cologne Act). The RWQCB requires projects to avoid impacts to wetlands if feasible and requires that projects do not result in a net loss of wetland acreage or a net loss of wetland function and values. The RWQCB typically requires compensatory mitigation for impacts to wetlands and/or waters of the State. The RWQCB also has jurisdiction over waters deemed 'isolated' or not subject to Section 404 jurisdiction under the Solid Waste Agency of Northern Cook County (SWANCC) decision. Dredging, filling, or excavation of isolated waters constitutes a discharge of waste to waters of the state and prospective dischargers are required obtain authorization through an Order of Waste Discharge or waiver thereof from the RWQCB and comply with other requirements of Porter-Cologne Act.

*Porter-Cologne Act*

The California State Water Resources Control Board (SWRCB) has determined in response to the U.S. Supreme Court decisions that reduce federal jurisdiction over Waters of the U.S., that the State would require that a Report of Waste Discharge be required for any discharge of waste, including fill, into "waters of the state", other than those projects requiring a federal Clean Water Act (CWA) Section 404 permit and the State's CWA Section 401 Certification of the federal permit, under the authority of the state Porter-Cologne Act. The Central Valley Regional Water Quality Control Board (Central Valley RWQCB) is responsible for issuing Waste Discharge Requirements

(WDRs) to protect state surface and groundwater quality after reviewing a Report of Waste Discharge.

*Sections 3503, 3503.5, and 3800 of the California Fish and Game Code*

These sections of the Fish and Game Code prohibit the "take or possession of birds, their nests, or eggs." Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered a "take." Such a take would also violate Federal law protecting migratory birds.

Incidental Take Permits (*i.e.*, Management Agreements) are required from the CDFW for projects that may result in the incidental take of species listed by the State of California as endangered, threatened, or candidate species. The permits require that impacts to protected species be minimized to the extent possible and mitigated to a level of insignificance.

Local Regulations

*City of Lemoore General Plan, 2030*

The City of Lemoore General Plan outlines several policies intended for the protection of natural plant and animal habitats, including the following, which apply to the Project:

**COS-G-7** Protect rare and endangered species.

**COS-I-10** Require protection of sensitive habitat areas and "special status" species in new development in the following order: 1) avoidance; 2) onsite mitigation, and 3) offsite mitigation. Require assessments of biological resources prior to approval of any development within 300 feet of any creeks, sensitive habitat areas, or areas of potential sensitive status species.

*The term "special status" species includes species classified as rare and endangered. These priorities are consistent with the California Department of Fish and Game guidelines. When habitat preservation on-site is not feasible (i.e., preserved parcels would be too small to be of any value), then off-site mitigation should occur.*

**COS-I-12** Require drainage basin buffers, maintenance of adequate water supply and reduced disturbance of the water table and wetlands systems.

**COS-I-14** Consult with trustee agencies (California Department of Fish and Game, U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers,

Environmental Protection Agency, and Regional Water Quality Control Board) during environmental review when special status species, sensitive natural communities, or wetlands or vernal pools may be adversely affected.

*Applicants will be required to consult with all agencies with review authority for projects in areas supporting wetlands and special status species at the outset of project planning.*

## Thresholds of Significance

The thresholds of significance for this section are established by the CEQA Checklist Item. In accordance with Appendix G of the CEQA Guidelines, the proposed Project would have a significant environmental impact if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on state or federally-protected wetlands (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery site;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

The following sources were reviewed for information on sensitive biological resources in the Project vicinity:[2]

- California Department of Fish & Wildlife (CDFW) California Natural Diversity Database (CNDDB)
- California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California
- U.S. Fish & Wildlife Service (USFWS) Species List
- U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) Web Soil Survey
- Current and historical aerial imagery
- United States Geological Survey (USGS) topographic maps
- Other relevant literature

For each of these data sources, the search was focused on the Lemoore USGS 7.5-minute quadrangle in which the Project is located, plus the surrounding eight quadrangles including Burrel, Riverdale, Laton, Vanguard, Hanford, Westhaven, Stratford, and Guernsey. For the CNDDB query, a 5-mile search radius was used.

The CNDDB provides element-specific spatial information on individually documented occurrences of special-status species and sensitive natural communities. Some of the information available for review in the CNDDB is still undergoing review by the CDFW; these records are identified as unprocessed data. The CNPS database provides similar information as the CNDDB, but at a much lower spatial resolution. Much of this information in these databases is submitted opportunistically and is often focused on protected lands or on lands where various developments have been proposed. Neither database represents data collected during comprehensive surveys for special-status resources in the region. As such, the absence of recorded occurrences in these databases at any specific location does not preclude the possibility that a special-status species could be present. The Web Soil Survey provides comprehensive data, but at a low resolution that requires confirmation in the field. The USFWS species list provides no spatial data on wildlife occurrences and provides only lists of species that might potentially be present.

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[2] Biological Resource Evaluation for the Lemoore Residential Development Project. Prepared by Colibri Ecological Consulting, LLC. December 2020. Page 8.

The results of database inquiries were reviewed to develop a comprehensive list of sensitive biological resources that may be present in the vicinity of the Project. This list was then evaluated against existing conditions observed during the site visit to determine which sensitive resources are or could be present, and then the potential for impacts to those resources to occur from Project implementation.

Field Surveys

*Reconnaissance Level*

A reconnaissance survey was conducted on December 3, 2020. The site and a surrounding 50-foot buffer were walked and inspected to evaluate and document the potential for the area to support state- or federally protected resources. The survey area also included a 0.5-mile buffer around the Project site to evaluate the potential occurrence of nesting special-status raptors, as demonstrated in Figure 3-3.1. The 0.5-mile buffer was surveyed by driving public roads and identifying the presence of large trees or other potentially suitable substrates for nesting raptors as well as open areas that could provide foraging habitat. The main survey area, including the Project site and surrounding 50-foot buffer, was evaluated for the presence of regulated habitats, including lakes, streams, and other waters using methods described in the Wetlands Delineation Manual and regional supplement and as defined by the CDFW under the Porter-Cologne Water Quality Control Act. All plants except ornamentals and all animals (vertebrate wildlife species) observed in the survey area were identified and documented.[3]

The USFWS species list for the Project included nine species listed as threatened or endangered under the FESA. None of those species could occur on or near the Project site due to either (1) the lack of habitat, (2) the Project site being outside the current range of the species, or (3) the presence of development that would otherwise preclude occurrence (see Table 3.3-1). As identified in the species list, the Project site does not occur in USFWS designated or proposed critical habitat for any species.[4]

Searching the CNDDB for records of special-status species from the Lemoore 7.5-minute USGS topographic quadrangle and the eight surrounding quadrangles produced 78 records of 24 species (see Table 3.3-1). Of those 24 species, four were not considered further because State or federal regulatory agencies or public interest groups do not recognize them through special

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[3] Biological Resource Evaluation for the Lemoore Residential Development Project. Prepared by Colibri Ecological Consulting, LLC. December 2020. See Appendix C. Page 8.

[4] Ibid. Page 11.

designation. Of the remaining 20 species, four are known from within 5 miles of the Project site. Of those four species, three are not expected to occur near the Project site due to either (1) the lack of habitat, (2) the Project site being outside the current range of the species, (3) their absence during the reconnaissance survey, or (4) a combination thereof. The remaining species, the State listed as threatened Swainson's hawk (*Buteo swainsoni*), is known to nest within 5 miles of the

**Figure 3-3.1**
**Reconnaissance Survey Area Map**[5]

[5] Biological Resource Evaluation for the Lemoore Residential Development Project. Prepared by Colibri Ecological Consulting, LLC. December 2020. Page 10.

**Table 3.3-1**
**Federally and State Listed Endangered or Threatened Species[6]**

| Species | Status | Habitat | Potential to Occur |
|---|---|---|---|
| **Federally and State Listed Endangered or Threatened Species** | | | |
| Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) | FT | Elderberry (*Sambucus* sp.) plants with stems > 1-inch diameter at ground level. | **None.** Habitat lacking; the Project site is outside the currently recognized range of this species. |
| Vernal pool fairy shrimp (*Branchinecta lynchi*) | FT | Vernal pools; some artificial depressions, ditches, stock ponds, vernal swales, ephemeral drainages, and seasonal wetlands. | **None.** Habitat lacking; no vernal pools or other potentially suitable aquatic features were found in the survey area. |
| Vernal pool tadpole shrimp (*Lepidurus packardi*) | FE | Vernal pools, clay flats, alkaline pools, and ephemeral stock tanks. | **None.** Habitat lacking; no vernal pools, alkaline pools, or ephemeral stock tanks were found in the survey area. |
| Delta smelt (*Hypomesus transpacificus*) | FT, SE | Estuarine habitat in Sacramento-San Joaquin River delta. | **None.** Habitat lacking; no connectivity to the aquatic habitat this species requires. |
| California red-legged frog (*Rana draytonii*) | FT, SSSC | Creeks, ponds, and marshes for breeding; small mammal burrows for upland cover. | **None.** Habitat lacking; the Project site is outside the current known range of this species. |

[6] Ibid. Page 12.

| Species | Status | Habitat | Potential to Occur |
|---|---|---|---|
| Blunt-nosed leopard lizard (*Gambelia sila*) | FE, SE, FP | Upland scrub and sparsely vegetated grassland with small mammal burrows at 100–2400 feet elevation. | **None.** Habitat lacking; the Project site consists of agricultural land cover. |
| Giant gartersnake (*Thamnophis gigas*) | FT, ST | Marshes, sloughs, ponds, or other permanent sources of water with emergent vegetation, and grassy banks or open areas during active season; uplands with underground refuges or crevices during inactive season. | **None.** Habitat lacking; no suitable aquatic resources in the survey area. |
| Swainson's hawk[3] (*Buteo swainsoni*) | ST | Large trees for nesting with adjacent grasslands, alfalfa fields, or grain fields for foraging. | **High.** Foraging habitat on the Project site and elsewhere in the survey area; potential nest trees within 0.5 miles. |
| Tricolored blackbird (*Agelaius tricolor*) | ST, SSSC | Large swaths of prickly, thorny, or emergent vegetation for nesting, with a nearby water source and grassland, pasture, or cattle feedlots for foraging. | **None.** Habitat lacking; no suitable upland or aquatic land cover in the survey area. |
| Western snowy plover (*Charadrius alexandrinus nivosus*) | FT, SSSC | Sandy beaches, salt pond levees, and shores of large alkali lakes. | **None.** Habitat lacking; no sandy beaches, salt pond levees, or alkali lakes in the survey area. |

| Species | Status | Habitat | Potential to Occur |
|---|---|---|---|
| Fresno kangaroo rat (*Dipodomys nitratoides exilis*) | FE, SE | Sandy, alkaline, saline, and clay-based soils in upland scrub and grassland. | **None.** Habitat lacking; no upland scrub or grassland in the survey area. |
| San Joaquin kit fox[3] (*Vulpes macrotis mutica*) | FE, ST | Grassland and upland scrub with a small mammal prey base. | **None.** Habitat lacking; no grassland or upland scrub in the survey area. |
| Tipton kangaroo rat[3] (*Dipodomys nitratoides nitratoides*) | FE, SE | Grassland and upland scrub with sparse to moderate shrub cover and saline soils; also fallowed agricultural fields. | **None.** Habitat lacking; no grassland, upland scrub, or fallowed agricultural fields in the survey area. |
| **State Species of Special Concern** | | | |
| Western spadefoot (*Spea hammondii*) | SSSC | Rain pools for breeding and small mammal burrows or other suitable refugia for nonbreeding upland cover. | **None.** Habitat lacking; no rain pools or other ephemeral water bodies were found in the survey area. |
| California glossy snake (*Arizona elegans occidentalis*) | SSSC | Arid scrub, rocky washes, grasslands, chapparal. | **None.** Habitat lacking; the Project site is outside the current known range of this species. |

| Species | Status | Habitat | Potential to Occur |
|---|---|---|---|
| Northwestern pond turtle (*Actinemys marmorata*) | SSSC | Permanent or intermittent ponds, rivers, marshes, streams, and irrigation ditches, usually with aquatic vegetation and woody debris for basking and adjacent natural upland areas for egg laying. | **None.** Habitat lacking; no suitable permanent or intermittent water bodies in the survey area; the irrigation ditch bordering the southeast corner of the Project site is evidently routinely cleaned for weed abatement and lacks water for most of the year. |
| Burrowing owl (*Athene cunicularia*) | SSSC | Grassland and upland scrub with friable soil; some agricultural or other developed and disturbed areas with ground squirrel burrows. | **None.** Habitat lacking; no suitable ground squirrel burrows in or near the survey area. |
| Yellow-headed blackbird (*Xanthocephalus xanthocephalus*) | SSSC | Freshwater marsh with emergent vegetation. | **None.** Habitat lacking; no freshwater marshes with emergent vegetation in the survey area. |
| **California Rare Plants** | | | |
| California alkali grass[3] (*Puccinellia simplex*) | 1B.2 | Scrub, meadows, seeps, grassland, vernal pools, saline flats, and mineral springs below 3000 feet elevation. | **None.** Habitat lacking; the Project site consisted of agricultural land cover. |
| Alkali-sink goldfields (*Lasthenia chrysantha*) | 1B.1 | Vernal pools and wet saline flats below 320 feet elevation. | **None.** Habitat lacking; no vernal pools or other ephemeral aquatic habitats in the survey area. |

| Species | Status | Habitat | Potential to Occur |
|---|---|---|---|
| Brittlescale<br><br>(*Atriplex depressa*) | 1B.2 | Alkaline or clay soils in chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools below 1000 feet elevation. | **None.** Habitat lacking; no suitable soils or vernal pools in the survey area. |
| Mud nama<br><br>(*Nama stenocarpa*) | 2B.2 | Intermittently wet areas below 2700 feet elevation. | **None.** Habitat lacking; the Project site consisted of agricultural land cover. |
| Panoche pepper-grass (*Lepidium jaredii* ssp. *album*) | 1B.2 | Alkaline soils in grassland, bottom lands, slopes, washes, and dry hillsides at 1640–2300 feet elevation. | **None.** Habitat lacking; the Project site is outside the known elevational range of this species. |
| Recurved larkspur (*Delphinium recurvatum*) | 1B.2 | Poorly drained, fine, alkaline soils in chenopod scrub, cismontane woodland, and valley and foothill grassland at 10–2800 feet elevation. | **None.** Habitat lacking; the Project site consisted of agricultural land cover. |

| Species | Status | Habitat | Potential to Occur |
|---|---|---|---|

| | | | |
|---|---|---|---|
| **Status[1]** | **Potential to Occur[2]** | | |
| FE = Federally listed Endangered | None: | Species or sign not observed; conditions unsuitable for occurrence. | |
| FT = Federally listed Threatened | Low: | Neither species nor sign observed; conditions marginal for occurrence. | |
| FP = State Fully Protected | Moderate: | Neither species nor sign observed; conditions suitable for occurrence. | |
| SE = State listed Endangered | High: | Neither species nor sign observed; conditions highly suitable for occurrence. | |
| ST = State listed Threatened | Present: | Species or sign observed; conditions suitable for occurrence. | |
| SSSC = State Species of Special Concern | | | |

| | |
|---|---|
| **CNPS California Rare Plant Rank[1]:** | **Threat Ranks[1]:** |
| 1B – plants rare, threatened, or endangered in California and elsewhere. | 0.1 – seriously threatened in California (> 80% of occurrences). |
| 2B – plants rare, threatened, or endangered in California but more common elsewhere. | 0.2 – moderately threatened in California (20-80% of occurrences). |
| 3 – plants about which more information is needed. | 0.3 – not very threatened in California (<20% of occurrences). |
| 4 – plants have limited distribution in California. | |

[3]Record from within 5 miles of the Project site.

Project site and use alfalfa fields similar to those on the Project site as foraging habitat. Therefore, the potential for this species to occur on or near the Project site is high.

Searching the CNPS Inventory of Rare and Endangered Plants of California yielded five taxa, four of which have a CRPR of 1B and one of which has a CRPR of 2B. None of those species are expected to occur on or near the Project site due to the lack of habitat (see Table 3.3-1).

The Project site is underlain by a mix of Nord complex and Whitewolf coarse sandy loam. It occupies flat and level terrain (0–1% slopes) at an elevation of 212–220 feet above mean sea level.

Reconnaissance Observations

A total of 26 plant species (5 native and 21 nonnative), 20 bird species, and two mammal species were observed during the survey.[7]

*Special Status Animal Species*

**Swainson's hawk (*Buteo swainsoni*)).** Swainson's hawk is a state listed as threatened raptor in the family Accipitridae. Swainson's hawk is a gregarious, migratory, breeding resident of Central California where it uses open areas including grassland, sparse shrubland, pasture, open woodland, and annual agricultural fields such as grain and alfalfa to forage on small mammals, birds, and reptiles. After breeding, it eats mainly insects, especially grasshoppers (Bechard et al. 2020). Swainson's hawks build small to medium-sized nests in medium to large trees near foraging habitat. The nesting season begins in March or April in Central California when this species returns to its breeding grounds from wintering areas in Mexico and Central and South America. Nest building commences within one to two weeks of arrival to the breeding area and lasts about one week ().[8] One to four eggs are laid and incubated for about 35 days. Young typically fledge in about 38–46 days and tend to leave the nest territory within 10 days of fledging (Colibri, 2020). Swainson's hawks depart for the non-breeding grounds between August and September.

One CNDDB record for Swainson's hawk from 2016 is known from within 5 miles of the Project site. No Swainson's hawks were observed during the reconnaissance survey. However, Swainson's hawks may occur on the Project site as they are known to use alfalfa fields as foraging habitat, and trees suitable for nesting were within the 0.5-mile survey area around the Project site. Therefore, this species is considered to have a high potential to occur on the Project site.[9]

## Impacts and Mitigation Measures

**Impact 3.3-1:** *Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or*

[7] Biological Resource Evaluation for the Lemoore Residential Development Project. Prepared by Colibri Ecological Consulting, LLC. December 2020. Page 21.

[8] Ibid. Page 23.

[9] Ibid. Pages 23-24.

*regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service?*

**Less than Significant Impact with Mitigation.**

Impacts to Special-Status Plant and Animal Species

As stated previously, searching the CNDDB for records of special-status species from the Lemoore 7.5-minute USGS topographic quadrangle and the eight surrounding quadrangles produced 78 records of 24 species (Table 3.3-1). Of those 24 species, four were not considered further because State or federal regulatory agencies or public interest groups do not recognize them through special designation (Appendix C). Of the remaining 20 species, four are known from within 5 miles of the Project site (Table 3.3-1, Figure 3.3-1). Of those four species, three are not expected to occur near the Project site due to either (1) the lack of habitat, (2) the Project site being outside the current range of the species, (3) their absence during the reconnaissance survey, or (4) a combination thereof. Species such as tricolor blackbird, San Joaquin kit fox, American badger, western burrowing owl and various other bird species are not likely to inhabit the site, there is a potential for special-status species to be present as residents or transients and for migratory birds to nest on and near the Project Site. Although the Project footprint is highly disturbed and contains low-quality burrowing and foraging habitat, suitable nesting and foraging habitat exists within the adjacent lands within, Mitigation Measures BIO-1 through BIO-6 are recommended which, when implemented, would reduce Project impacts to biological resources to less than significant levels.

The remaining species, the State listed as threatened Swainson's hawk (*Buteo swainsoni*), is known to nest within 5 miles of the Project site and use alfalfa fields similar to those on the Project site as foraging habitat.[10] Therefore, the potential for this species to occur on or near the Project site is high. Swainson's hawks have a low potential to nest on the project site but could use the site for foraging. If present during construction activities, the Project would have the potential to directly impact this listed raptor species through mortality or injury which would be a significant impact. Potential impacts would be avoided through impact minimization measures such as preconstruction surveys through the implementation of Mitigation Measure BIO-1 through BIO-6 and would ensure that potential impacts remain ***less than significant.***

[10] Biological Resource Evaluation for the Lemoore Residential Development Project. Prepared by Colibri Ecological Consulting, LLC. December 2020. Pages 11.

**Mitigation Measures:**

**BIO-1:** 1. To the extent practicable, construction shall be scheduled to avoid the Swainson's hawk nesting season, season (February 15 to August 31).

2. If it is not possible to schedule construction between September and February, prior to commencement of ground disturbance activities, a qualified biologist shall conduct surveys for Swainson's hawk in accordance with the Swainson's Hawk Technical Advisory Committee's *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (SWTAC 2000, Appendix C). Surveys shall be conducted within a 10-mile radius around the Project site to identify the nearest nest, which will determine the habitat mitigation ratio. If no Swainson's hawk nests are observed, no further action is necessary. CDFW shall be consulted if an active nest is found within 0.5 miles of the Project site. A copy of the survey report shall be submitted to the City of Lemoore Community Development Department.

**BIO- 2:** If an active Swainson's hawk nest is discovered at any time within 0.5 mile of active construction, a qualified biologist shall complete an assessment of the potential for current construction activities to impact the nest. The assessment shall consider the type of construction activities, the location of construction relative to the nest, the visibility of construction activities from the nest location, and other existing disturbances in the area that are not related to construction activities of this Project. Based on this assessment, the biologist shall determine if construction activities can proceed, and the level of nest monitoring required. Construction activities shall not occur within 500 feet of an active nest but depending upon conditions at the site this distance may be reduced. Full-time monitoring to evaluate the effects of construction activities on nesting Swainson's hawks may be required. The qualified biologist shall have the authority to stop work if it is determined that Project construction is disturbing the nest. These buffers may need to increase depending on the sensitivity of the nesting Swainson's hawk to disturbances and at the discretion of the qualified biologist. No avoidance would be needed if construction occurs near a known Swainson's hawk nest outside of the Swainson's hawk nesting season

**BIO-3:** Prior to the issuance of grading or building permits, the Project proponent shall

consult with the California Department of Fish and Wildlife (CDFW) regarding compensation for the  loss of 156 acres of Swainson's hawk foraging habitat. Potential compensation may include a compensatory ratio of 0.5:1 up to 1:1 ratio, depending on the location of active Swainson's hawk nests. Evidence of consultation with CDFW and payment of compensation shall be submitted to the City of Lemoore Community Development Department.).

**BIO-4:** 1. To the extent practicable, construction shall be scheduled to avoid the nesting season (February 1 to September 15).

2. If it is not possible to schedule construction between September 15 and February 15, a pre-construction clearance survey for nesting birds shall be conducted by a qualified no more than 14 days prior to the start of construction activities. During this survey, the qualified biologist shall inspect all potential nest substrates in and immediately adjacent to the impact areas, including within 250 feet in the case of raptor nests and within 100 feet for nests of all other birds. If an active nest is found close enough to the construction area to be disturbed by these activities, the qualified biologist shall determine the extent of a construction-free buffer to be established around the nest. If work cannot proceed without disturbing the nesting birds, work shall be halted or redirected to other areas until nesting and fledging are completed or the nest has failed for non-construction related reasons.

**BIO-5:** Within 14 days prior to the start of Project ground-disturbing activities, a pre-activity survey with a 500-foot buffer where land access is permitted shall be conducted by a qualified biologist knowledgeable in the identification of burrowing owl, American badger, San Joaquin kit fox (SJKF) and other special status species that are known to be in the area, and approved by the CDFW. Surveys need not be conducted for all areas at one time; they may be phased so that surveys occur within 14 days of the portion of the Project site that will be disturbed. If dens/burrows that could support any of these species are discovered during the pre-activity surveys, the avoidance buffers outlined below shall be established. No work would occur within these buffers unless the biologist approves and monitors the activity.  If no listed or special status species is observed during the preconstruction clearance survey, no further action in necessary.

Burrowing Owl (active burrows)

- Non-breeding season: September 1 – January 31 – 160 feet
- Breeding season: February 1 – August 31 – 250 feet

American Badger/SJKF

- Potential or Atypical den – 50 feet
- Known den – 100 feet
- Natal or pupping den – 500 feet, unless otherwise specified by CDFW.

If burrowing owl are found within these recommended buffers and avoidance is not possible, burrow exclusion shall be conducted by qualified biologists and only during the non-breeding season, before breeding behavior is exhibited and after the burrow is confirmed empty through non-invasive methods, such as surveillance. Replacement of occupied burrows with artificial burrows shall occur at a ratio of one burrow collapsed to one artificial burrow constructed (1:1) to mitigate for evicting burrowing and the loss of burrows. Burrowing owl may attempt to colonize or re-colonize an area that will be impacted; thus, ongoing surveillance shall occur at excluded burrows at a rate that is sufficient to detect burrowing owl if they return.

If, during construction activities, a live burrowing owl, American badger, or SJKF is encountered, all construction activity should stop in the affected area until the animal leaves of its own volition. The special-status species should be avoided by construction activities and construction workers and allowed to leave the Project Site without harassment

**BIO-6:** Prior to the initiation of construction activities, all construction personnel should attend a Worker Environmental Awareness Training program developed by a qualified biologist. Any personnel associated with construction that did not attend the initial training shall be trained by the authorized biologist prior to working on the project site. Any employee responsible for the operations and maintenance or decommissioning of the project facilities shall also attend the Worker Environmental Awareness Training program prior to starting work on the project and on an annual basis.

The Program shall be developed and presented by the project qualified biologist(s) or designee approved by the qualified biologist(s). The program shall include information on the life histories of special-status species with potential to occur on the Project, their legal status, course of action should these species be encountered on-site,

and avoidance and minimization measures to protect these species. It shall include the components described below:

a. Information on the life history and identification of special-status species that may occur or that may be affected by Project activities. The program shall also discuss the legal protection status of each such species, the definition of "take" under the Federal Endangered Species Act and California Endangered Species Act, measures the Project proponent/operator shall implement to protect the species, reporting requirements, specific measures for workers to avoid take of special-status plant and wildlife species, and penalties for violation of the requirements outlined in the California Environmental Quality Act mitigation measures and agency permit requirements.

b. An acknowledgement form signed by each worker indicating that the Worker Environmental Awareness Training and Education program has been completed shall be kept on file at the construction site.

c. A copy of the training transcript and/or training video, as well as a list of the names of all personnel who attended the Worker Environmental Awareness Training and Education program, and signed acknowledgement forms shall be submitted to the City of Lemoore Community Development Department.

d. A sticker shall be placed on hard hats indicating that the worker has completed the Worker Environmental Awareness Training and Education program. Construction workers shall not be permitted to operate equipment within the construction areas unless they have attended the Worker Environmental Awareness Training and Education Program and are wearing hard hats with the required sticker.

e. The construction crews and contractor(s) shall be responsible for preventing unauthorized impacts from project activities to sensitive biological resources that are outside the areas defined as subject to impacts by Project permits. Unauthorized impacts may result in project stoppage, and/or fines depending on the impact and coordination with the California Department of Fish and Wildlife and/or U.S. Fish and Wildlife Service

**Impact 3.3-2:** *Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service, or have a substantial adverse effect on federally or state-protected wetlands (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*

**Less than Significant Impact with Mitigation.** An unnamed irrigation ditch lies within 50 feet of the southeastern corner of the Project site. There are no other bodies of water on or near the immediate vicinity of the Project site.

The Project will require a 50-foot easement for irrigation water to Lemoore Canal & Irrigation District Company as the above-ground canal along a portion of the western and southern boundary will be abandoned and relocated into an underground pipe through the Project site. The irrigation ditch is distributional from the Lemoore Canal to the east, which distributes water from the Kings River to the north. [11] A formal delineation of wetlands or water features that may be impacted by the Project was not conducted during the reconnaissance survey of the Project. As such, a formal field delineation of waters of the State and waters of the U.S. would determine whether permits would be required from the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), or California Department of Fish and Wildlife (CDFW) for development within this area. BIO-7 requires a delineation of the drainage and determination of jurisdiction prior to the issuance of grading permits. If the drainage is jurisdictional, additional permitting with the appropriate regulatory agencies is also required prior to construction activities. With implementation of BIO-7, impacts of the Project to waters and wetlands would be ***less than significant***.

The Project site does not support any sensitive natural communities and does not overlap critical habitat, current or proposed. Therefore, the Project would have a ***less than significant impact*** on sensitive natural communities.

**Mitigation Measures:**

**BIO-7:** Prior to issuance of any grading or building permit, the Project proponent/developer shall submit a final Delineation report to the City of Lemoore. A copy of this report shall also be provided to the Regional Water Quality Control Board (RWQCB),

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[11] Biological Resource Evaluation for the Lemoore Residential Development Project. Prepared by Colibri Ecological Consulting, LLC. December 2020. Page 23.

California Department of Fish & Wildlife (CDFW) and U.S. Army Corps of Engineers (USACE) (as applicable). The report shall include information as shown below as a plan if necessary and shall outline compliance to the following:

1. Delineation of all jurisdictional features at the project site. Potential jurisdictional features within the project boundary identified in the jurisdictional delineation report may be shown in plan form.
2. If the Project has a potential to directly or indirectly impact jurisdictional aquatic resources, a formal aquatic resource delineation of these areas shall be performed by a qualified professional to determine the extent of agency jurisdiction and permits/authorizations from the appropriate regulating agencies (RWQCB, CDFW and USACE) shall be obtained prior to disturbance to jurisdictional features.

   If it is determined that drainage is jurisdictional and cannot be avoided, the Project proponent shall obtain a Section 401 Waters Quality Certification from the RWQCB, a Section 404 permit from USACE and a Lake and Streambed Alteration Agreement from the CDFW, if required prior to impacting any waters.

   As part of these authorizations, compensatory mitigation may be required by the regulating agencies to offset the loss of aquatic resources. If so, and as part of the permit application process, a qualified professional shall draft a Mitigation and Monitoring Plan to address implementation and monitoring requirements under the permit to ensure that the Project would result in no net loss of habitat functions and values. The Plan shall contain, at a minimum, mitigation goals and objectives, mitigation location, a discussion of actions to be implemented to mitigate the impact, monitoring methods and performance criteria, extent of monitoring to be conducted, actions to be taken in the event that the mitigation is not successful, and reporting requirements. The Plan shall be approved by the appropriate regulating agencies and compensatory mitigation shall take place either on site or at an appropriate off-site location.
3. Any material/spoils generated from project activities containing hazardous materials shall be located away from jurisdictional areas or special-status habitat and protected from storm water run-off using temporary perimeter sediment barriers such as berms, silt fences, fiber rolls, covers, sand/gravel bags, and straw bale barriers, as appropriate. Protection measures should follow project-specific criteria as developed in a Stormwater Pollution Prevention and Protection Plan (SWPPP).

4. Equipment containing hazardous liquid materials shall be stored on impervious surfaces or plastic ground covers to prevent any spills or leakage from contaminating the ground and at least 50 feet outside the delineated boundary of jurisdictional water features.
5. Any spillage of material shall be stopped if it can be done safely. The contaminated area shall be cleaned, and any contaminated materials properly disposed. For all spills, the project foreman or designated environmental representative shall be notified.

**Impact 3.3-3:** *Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery site; (e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance or conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?*

**Less Than Significant Impact with Mitigation.** The Project site is surrounded by development and is highly disturbed. Although the Project is located within the Pacific Flyway, it is very small in comparison to the Flyway, which covers all of California. The Project is low-lying and is not expected to impact avian migratory movements within the Flyway.

The Project is not located within a mapped wildlife movement corridor or linkage. As noted previously, the above-ground canal along a portion of the western and southern boundary will be impacted by the Project. Local irrigation canals and ditches may be used by local wildlife to travel through the vicinity. To reduce impacts to biological resources, BIO-1 through BIO-6 will be implemented.

The irrigation ditch offers wildlife a corridor for movement to or from the site. However, there is no other body of water in the immediate vicinity of the Project site, which precludes amphibians, fishes and crustaceans. Due to the disturbed nature of the site and consistent vegetation removal, nesting capabilities of protected birds, including migratory birds, is considered severely limited. However unlikely, migratory birds, including tricolor and yellow headedblackbirds, could nest on or near the Project site. Such species include, but are not limited to, mourning dove (*Zenaida macroura*), red-tailed hawk (*Buteo jamaicensis*), and California scrubjay (*Aphelocoma californica*). Implementation of Mitigation Measures BIO-4 through BIO-6 will ensure that Project related impacts remain ***less than significant.***

The Project is not within the boundaries of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan. There would be no impact.

**Mitigation Measures:**

Implementation of BIO-4 through BIO-6.

**Cumulative Impacts**

**Cumulative impacts would be significant and unavoidable even with implementation of mitigation.** Cumulative impacts for a project would be significant if the incremental effects of the individual project are considerable when combined with the effects of past projects, other current projects, and probable future projects. As described above, the Project impacts would be less than significant with implementation of Mitigation Measures BIO-1 through BIO-7.

The geographic area for considering cumulative impacts to biological resources is the western portion of the San Joaquin Valley. Development in Kings County and the San Joaquin Valley has resulted in a decline of many plant and animal species. Implementation of the Project in addition to the other projects underway or proposed within Lemoore and Kings County would impact transient wildlife species, including burrowing owls, Swainson's hawk, other raptors, and San Joaquin kit foxes. The Project site contains habitat that support insects, rodents and small birds that provide a prey base for raptors and terrestrial wildlife. In addition, based on the literature review and database search completed for the project, the region is known to support a diversity of special-status species, some of which are expected to utilize the Project site on a transient basis, if at all. Additionally, the Project will eliminate 156 acres of cropland that is utilized by Swainson's hawk as foraging habitat. Although the Project will provide mitigation to reduce impacts to Swainson's hawk with implementation of BIO-1 through BIO-3, the proposed Project, in combination with all identified cumulative projects, could result in a cumulatively considerable contribution to a significant cumulative impact.

Given the number of present, and reasonably foreseeable future development projects in the western San Joaquin valley, the Project, when combined with these projects, would result in a significant and unavoidable cumulative loss of foraging habitat for special-status species. Cumulative impacts are ***significant and unavoidable even with implementation of mitigation.***

# 3.4 Cultural Resources

This section of the DEIR identifies potential impacts of the proposed Project on cultural, archaeological and historical resources.

Cultural resources include prehistoric-era archaeological sites, historic-era archaeological sites, Native American traditional cultural properties, sites of religious and cultural significance, and historical buildings, structures, objects, and sites. The importance of any single cultural resource is defined by the context in which it was first created, current public opinion and modern yet evolving analysis. From the analytical perspective temporal and geographic considerations help to define the historical context of the Project area.

A Cultural Resources Survey was prepared for the Project and is the basis for analysis for the discussion herein (see Appendix E). Tribal consultations pursuant to SB 18 and AB 52 are addressed in Section 3.15 – Tribal Cultural Resources.

## Environmental Setting

### Environmental Background

The study area is located at an elevation of 230 feet above mean sea level on the open flats of the San Joaquin Valley north of the City of Lemoore, Kings County, California. Currently this region can be characterized as a dry open valley bottom now utilized for suburban or agricultural uses. The study area is north of the former shoreline of Tulare Lake, at roughly 200 feet above mean sea level. Prior to reclamation and channelization, the region would have been a low-lying, water-rich area characterized by streams, sloughs, marshes, and swamps. Occasionally inundated by floodwaters, in many years portions of this region would have been swampy during the winter rainy season and marsh land during other parts of the year. Historical and recent land-use has changed the vegetation that was once present within and near the Project area. The immediate Project location historically most likely fell within the Valley Grassland community, however, with Riparian Woodlands present along streams and freshwater marshes common in the area (Appendix E).

### Ethnographic Background

Penutian-speaking Yokuts tribal groups occupied the southern San Joaquin Valley region and much of the nearby Sierra Nevada. Ethnographic information about the Yokuts was collected primarily by Powers (Appendix E). For a variety of historical reasons, existing research information emphasizes the central Yokuts tribes who occupied both the valley and particularly

the foothills of the Sierra. The northernmost tribes suffered from the influx of Euro-Americans during the Gold Rush and their populations were in substantial decline by the time ethnographic studies began in the early twentieth century. In contrast, the southernmost tribes were partially removed by the Spanish to missions and eventually absorbed into multi-tribal communities on the Sebastian Indian Reservation (on Tejon Ranch), and later the Tule River Reservation and Santa Rosa Rancheria to the north. The result is an unfortunate scarcity of ethnographic detail on southern Valley tribes, especially in relation to the rich information collected from the central foothills tribes where native speakers of the Yokuts dialects are still found. Regardless, the general details of indigenous life-ways were similar across the broad expanse of Yokuts territory, particularly in terms of environmentally influenced subsistence and adaptation and with regard to religion and belief, which were similar everywhere.

This scarcity of specific detail is particularly apparent in terms of southern valley tribal group distribution. Latta places the north shore of Tulare Lake east of Fish Slough in Nutúnutu territory, with the closest village being Wiu nearer the Mussel Slough inlet. Kroeber however, indicates that Nutúnutu territory did not include the north shore of Tulare Lake, but that the north shore, including Fish Slough, was Tachi territory. The village of Wiu remains near the inlet of Cottonwood Creek and Mussel Slough.

The Yokuts settlement pattern was largely consistent, regardless of specific tribe involved. Winter villages were typically located along lakeshores and major stream courses (as these existed circa AD 1800), with dispersal phase family camps located at elevated spots on the valley floor and near gathering areas in the foothills.

Most Yokuts groups, again regardless of specific tribal affiliation, were organized as a recognized and distinct tribelet; a circumstance that almost certainly pertained to the tribal groups noted above. Tribelets were land-owning groups organized around a central village and linked by shared territory and descent from a common ancestor. The population of most tribelets ranged from about 150 to 500 peoples.

Each tribelet was headed by a chief who was assisted by a variety of assistants, the most important of whom was the winatum, a herald or messenger and assistant chief. A shaman also served as religious officer. While shamans did not have any direct political authority, as Gayton (1930) has illustrated, they maintained substantial influence within their tribelet.

Shamanism is a religious system common to most Native American tribes. It involves a direct and personal relationship between the individual and the supernatural world enacted by entering a trance or hallucinatory state (usually based on the ingestion of psychotropic plants, such as

jimsonweed or more typically native tobacco). Shamans were considered individuals with an unusual degree of supernatural power, serving as healers or curers, diviners, and controllers of natural phenomena (such as rain or thunder). Shamans also produced the rock art of this region, depicting the visions they experienced in vision quests believed to represent their spirit helpers and events in the supernatural realm (Appendix E).

The centrality of shamanism to the religious and spiritual life of the Yokuts was demonstrated by the role of shamans in the yearly ceremonial round. The ritual round, performed the same each year, started in the spring with the jimsonweed ceremony, followed by rattlesnake dance and (where appropriate) first salmon ceremony. After returning from seed camps, fall rituals began in the late summer with the mourning ceremony, followed by first seed and acorn rites and then bear dance. In each case, shamans served as ceremonial officials responsible for specific dances involving a display of their supernatural powers

Subsistence practices varied from tribelet to tribelet based on the environment of residence. Throughout Native California, and Yokuts territory in general, the acorn was a primary dietary component, along with a variety of gathered seeds. Valley tribes augmented this resource with lacustrine and riverine foods, especially fish and wildfowl. As with many Native California tribes, the settlement and subsistence rounds included the winter aggregation into a few large villages, where stored resources (like acorns) served as staples, followed by dispersal into smaller camps, often occupied by extended families, where seasonally available resources would be gathered and consumed.

Although population estimates vary and population size was greatly affected by the introduction of Euro-American diseases and social disruption, the Yokuts were one of the largest, most successful groups in Native California. Cook estimates that the Yokuts region contained 27 percent of the aboriginal population in the state at the time of contact; other estimates are even higher. Many Yokuts people continue to reside in the southern San Joaquin Valley today, including at the nearby Santa Rosa Rancheria.

<u>Archival Records Search</u>

An archival records search conducted by the staff of the Southern San Joaquin Valley Information Center (IC), California State University Bakersfield, on April 5, 2021. The records search was completed to determine: (i) if prehistoric or historical archaeological sites had previously been recorded within the study areas; (ii) if the Project area had been systematically surveyed by archaeologists prior to the initiation of this field study; and/or (iii) whether the general area within which the Project lies was known to contain archaeological sites and to thereby be

archaeologically sensitive. Records examined included archaeological site files and maps, the NRHP, Historic Property Data File, California Inventory of Historic Resources, and the California Points of Historic Interest.

The records search indicated that a very small portion of the southwest corner of the study area was adjacent to a portion of an earlier linear survey. However, the Project parcel itself had not been previously surveyed and no resources had been documented within it. No other studies had been conducted within 0.5 mi. of the study area. One previously recorded resource, a segment of the Lemoore Canal, has been documented within the search radius.

Field Survey

An intensive Phase I cultural resources survey for the Project study area was conducted by ASM Associate Archaeologist Robert Azpitarte, B.A., with the assistance of ASM Assistant Archaeologists Stacey Escamilla, M.A., and Maggie Lemus, B.A. The survey was conducted on April 26, 2021, with good to excellent surface visibility. The field methods employed included intensive pedestrian examination of the ground surface for evidence of archaeological sites in the form of artifacts, surface features (e.g., bedrock mortars, historical mining equipment), and archaeological indicators (e.g., organically enriched midden soil, burnt animal bone); the identification and location of any discovered sites, should they have been present; tabulation and recording of surface diagnostic artifacts; site sketch mapping; preliminary evaluation of site integrity; and site recording, following the California Office of Historic Preservation Instructions for Recording Historic Resources, using DPR 523 forms. No cultural resources were identified within the Project area as a result of the intensive pedestrian survey.

## Regulatory Setting

Federal Regulations

*National Historic Preservation Act (1966)*

The National Historic Preservation Act (NHPA) is the most prominent federal law dealing with historic preservation. The NHPA established guidelines to “preserve important historic, cultural, and natural aspects of our national heritage, and to maintain, wherever possible, an environment that supports diversity and a variety of individual choice.” The NHPA includes regulations specifically for federal land-holding agencies, but also includes regulations (Section 106) which pertain to all projects that are funded, permitted, or approved by any federal agency and which have the potential to affect cultural resources. All projects that are subject to NEPA are also subject

to compliance with Section 106 of the NHPA and the NEPA requirements concerning cultural resources can be addressed through compliance with Section 106 of the NHPA process.

Provisions of NHPA establish a National Register of Historic Places (The National Register) maintained by the National Park Service, the Advisory Council on Historic Preservation, State Offices of Historic Preservation, and grants-in-aid programs. At the federal level, the Office of Historic Preservation (OHP) carries out reviews under Section 106 of the National Historic Preservation of 1966, as amended.

State of California Regulations

In the State of California, the process of reviewing projects and decisions that may impact cultural resources including historic, archaeological, and paleontological resources is conducted under several different federal, state, and local laws. CEQA requires that public agencies consider the effects of their actions on historical resources eligible for listing on the California Register of Historical Resources.

Additionally, California Public Resources Code 5024 requires consultation with OHP when a project may impact historical resources located on State-owned land. California State law (SB 18) requires cities and counties to notify and consult with California Native American Tribes about proposed local land use planning decisions for the purpose of protecting Traditional Tribal Cultural Places ("cultural places").

*California Register of Historic Resources (CRHR)*

California State law also provides for the protection of cultural resources by requiring evaluations of the significance of prehistoric and historic resources identified in CEQA documents. Under CEQA, a cultural resource is considered an important historical resource if it meets any of the criteria found in Section 15064.5(a) of the CEQA Guidelines. Criteria identified in the CEQA Guidelines are similar to those described under the NHPA. The State Historic Preservation Office (SHPO) maintains the CRHR. Historic properties listed, or formally designated for eligibility to be listed, on The National Register are automatically listed on the CRHR. State Landmarks and Points of Interest are also automatically listed.

The CRHR can also include properties designated under local preservation ordinances or identified through local historical resource surveys.

*Health and Safety Code, Section 7050.5*

Section 7050.5 of the California Health and Safety Code requires that construction or excavation be stopped in the vicinity of discovered human remains until the county coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the California Native American Heritage Commission (NAHC). CEQA Guidelines (Public Resources Code Section 5097) specify the procedures to be followed in case of the discovery of human remains on non-federal land. The disposition of Native American burials falls within the jurisdiction of the NAHC.

*California Government Code 65352.3-5, Local Government – Tribal Consultation California Government Code Sections 65092, 65351, 65352, 65352.3 and 65352.4, formally known as Senate Bill (SB) 18.*

These regulations regulate the consultation with California Native American tribes having traditional lands located within the jurisdiction of applicable cities and counties. The intent of the underlying legislation was to provide all California Native American tribes that are on the contact list maintained by the Native American Heritage Commission, an opportunity to consult with specific local governments for the purpose of preserving and protecting their sacred places. Such consultations apply to the preparation, adoption and amendment of general plans.

*California Historical Resources Information System (CHRIS)*

The California Historical Resources Information System (CHRIS) is a statewide system for managing information on the full range of historical resources identified in California. CHRIS is a cooperative partnership between the citizens of California, historic preservation professionals, twelve Information Centers, and various agencies. This system bears the following responsibilities: integrate newly recorded sites and information on known resources into the California Historical Resources Inventory; furnish information on known resources and surveys to governments, institutions, and individuals who have a justifiable need to know; and supply a list of consultants who are qualified to do work within their area.

Typically, the initial step in addressing cultural resources in the project review process involves contacting the appropriate Information Center to conduct a record search. A record search should identify any previously recorded historical resources and previous archaeological studies within the project area, as well as provide recommendations for further work, if necessary. Depending on the nature and location of the project, the project proponent or lead agency may be required to contact appropriate Native American representatives to aid in the identification of traditional cultural properties.

If known cultural resources are present within the Project area, or if the Project area has not been previously investigated for the presence of such resources, the Information Center may recommend a survey for historical, archaeological, and paleontological sites. Cultural resources that may be adversely affected by an undertaking should be evaluated for significance. For archaeological sites, a significance evaluation typically involves conducting test excavations. For historical sites or standing structures, historical research should be conducted and an architectural evaluation may be warranted. If significant, the resource should be protected from adverse impacts. Data recovery excavations may be warranted in the case of unavoidable damage to archaeological sites. If human burials are present, the appropriate coroner's office should be contacted. A professional archaeologist and appropriate Native American representatives should also be consulted.

When an initial study identifies the existence, or the probable likelihood, of Native American human remains within the project, a lead agency shall work with the appropriate Native Americans as identified by the Native American Heritage Commission as provided in Public Resources Code 5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials with the appropriate Native Americans as identified by the Native American Heritage Commission.

*California Environmental Quality Act (CEQA)*

CEQA is applicable to discretionary actions by state or local lead agencies. Under CEQA, lead agencies must analyze impacts to cultural resources. Significant impacts under CEQA occur when "historically significant" or "unique" cultural resources are adversely affected, which occurs when such resources could be altered or destroyed through project implementation. Historically significant cultural resources are defined by eligibility for or by listing in the California Register of Historical Resources (CRHR). In practice, the federal NRHP criteria for significance applied under Section 106 are generally (although not entirely) consistent with CRHR criteria (see PRC § 5024.1, Title 14 CCR, Section 4852 and § 15064.5(a)(3)).

*Assembly Bill (AB) 52*

AB 52, which was approved in September 2014 and became effective on July 1, 2015, requires that CEQA lead agencies consult with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of a proposed project, if requested by the tribe. A provision of the bill, chaptered in CEQA Section 21086.21, also specifies that a project with an

effect that may cause a substantial adverse change in the significance of a TCR is a project that may have a significant effect on the environment.

Defined in Section 21074(a) of the Public Resources Code, TCRs are:

1. Sites, features, places, cultural landscapes, sacred places and objects with cultural value to a California Native American tribe that are either of the following:
   a. Included or determined to be eligible for inclusion in the California Register of Historical Resources; or
   b. Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.
2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

TCRs are further defined under Section 21074 as follows:

a. A cultural landscape that meets the criteria of subdivision (a) is a TCR to the extent that the landscape is geographically defined in terms of the size and scope of the landscape; and
b. A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "non-unique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a TCR if it conforms with the criteria of subdivision (a).

Mitigation measures for TCRs must be developed in consultation with the affected California Native American tribe pursuant to newly chaptered Section 21080.3.2, or according to Section 21084.3. Section 21084.3 identifies mitigation measures that include avoidance and preservation of TCRs and treating TRCs with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource.

*Senate Bill 18*

SB 18 (Statutes of 2004, Chapter 905), which went into effect January 1, 2005, requires local governments (city and county) to consult with Native American tribes before making certain

planning decisions and to provide notice to tribes at certain key points in the planning process. The intent is to "provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting, or mitigating impacts to, cultural places" (Governor's Office of Planning and Research, 2005).

The purpose of involving tribes at these early planning stages is to allow consideration of cultural places in the context of broad local land use policy, before individual site-specific, project-level, land use designations are made by a local government. The consultation requirements of SB 18 apply to general plan or specific plan processes proposed on or after March 1, 2005.

According to the Tribal Consultation Guidelines: Supplement to General Plan Guidelines (Governor's Office of Planning and Research, 2005), the following are the contact and notification responsibilities of local governments:

- Prior to the adoption or any amendment of a general plan or specific plan, a local government must notify the appropriate tribes (on the contact list maintained by the NAHC) of the opportunity to conduct consultations for the purpose of preserving, or mitigating impacts to, cultural places located on land within the local government's jurisdiction that is affected by the proposed plan adoption or amendment. Tribes have 90 days from the date on which they receive notification to request consultation, unless a shorter timeframe has been agreed to by the tribe (Government Code Section 65352.3).
- Prior to the adoption or substantial amendment of a general plan or specific plan, a local government must refer the proposed action to those tribes that are on the NAHC contact list and have traditional lands located within the city or county's jurisdiction. The referral must allow a 45-day comment period (Government Code Section 65352). Notice must be sent regardless of whether prior consultation has taken place. Such notice does not initiate a new consultation process.
- Local government must send a notice of a public hearing, at least 10 days prior to the hearing, to tribes who have filed a written request for such notice (Government Code Section 65092).

Local Regulations

*City of Lemoore General Plan, 2030*

The following lists goals and policies from the City of Lemoore General Plan pertaining to cultural resources that are applicable to the proposed Project.

**COS-G-11** Identify and preserve the archaeological and historic resources that are found within the Lemoore Planning Area.

**COS-I-33** Require that new development analyze and avoid potential impacts to archaeological, paleontological, and historic resources by:

- Requiring a records review for development proposed in areas that are considered archaeologically or paleontologically sensitive;
- Determining the potential effects of development and construction on archeological or paleontological resources (as required by CEQA);
- Requiring pre-construction surveys and monitoring during any ground disturbance for all development in areas of historical and archaeological sensitivity; and
- Implementing appropriate measures to avoid the identified impacts, as conditions of project approval.

*In the event that historical, archaeological, or paleontological resources are accidentally discovered during construction, grading activity in the immediate area shall cease and materials and their surroundings shall not be altered or collected. A qualified archaeologist or paleontologist must make an immediate evaluation and avoidance measures or appropriate mitigation should be completed, according to CEQA Guidelines. The State Office of Historic Preservation has issued recommendations for the preparation of Archeological Resource Management Reports that will be used as guidelines.*

**COS-I-34** If, prior to grading or construction activity, an area is determined to be sensitive for paleontological resources, retain a qualified paleontologist to recommend appropriate actions. Appropriate action may include avoidance, preservation in place, excavation, documentation, and/or data recovery, and shall always include preparation of a written report

documenting the find and describing steps taken to evaluate and protect significant resources.

## Thresholds of Significance

In accordance with Appendix G to the State CEQA Guidelines, the project would have a significant impact on cultural resources if it would cause any of the following conditions to occur:

- Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5; or
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5; or
- Disturb any human remains, including those interred outside of dedicated cemeteries.

Under CEQA, significant cultural resources are those archaeological resources and historical properties that:

- Are associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- Are associated with the lives of persons important in our past;
- Embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values; or
- Have yielded, or may be likely to yield, information important in prehistory or history.

Unique resources under CEQA, in slight contrast, are those that represent:

An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC § 21083.2(g)).

Preservation in place is the preferred approach under CEQA to mitigating adverse impacts to significant or unique cultural resources.

## Impacts and Mitigation Measures

**Impact 3.4-1:** *Cause a substantial adverse change in the significance of a historical or archaeological resource pursuant to §15064.5?*

**Less Than Significant With Mitigation.** As stated previously, according to the records search, a very small portion of the southwest corner of the study area was adjacent to a portion of an earlier linear survey, resulting in one previously recorded resource within the study area, a segment of the Lemoore Canal. However, the Project will not impact the Canal. The Project parcel itself had not been previously surveyed and no resources had been documented within it. No other studies had been conducted within 0.5 mi. of the study area. The intensive field survey performed on behalf of the Project did not result in the identification of cultural resources.

Additionally, the study area was evaluated by Caltrans in 2010 and was identified as having "Low to Moderately Low" sensitivity for subsurface deposits (Appendix E). Given its low sensitivity for buried deposits according to this analysis, it is therefore unlikely that the Project study area would contain subsurface archaeological deposits.

Although construction and operation would occur on previously disturbed land, unknown historical resources may be discovered during ground-disturbing activities. In order to account for unanticipated discoveries and the potential to impact previously undocumented or unknown resources, the following mitigation measures are recommended. With the implementation of Mitigation Measures CUL-1 through CUL-3, impacts under this criterion would be less than significant with mitigation.

**Mitigation Measures:**

**CUL-1:** Prior to any ground disturbance, a surface inspection of the site shall be conducted by a Tribal Monitor. The Tribal Cultural Staff shall monitor the site during grading activities. The Tribal Staff shall provide pre-project-related activities briefings to supervisory personnel and any excavation contractor, which will include information on potential cultural material finds, and any excavation contractor, which will include information on potential cultural material finds, and on the procedures, to be enacted if resources are found. Prior to any ground disturbance,

the applicant shall offer the Santa Rosa Rancheria Tachi Yokut Tribe the opportunity to provide a Native American Monitor during ground-disturbing activities. Tribal participation would be dependent upon the availability and interest of the tribe.

**CUL-2:** In the event that historical or archaeological cultural resources are discovered during project-related activities or decommissioning, operations shall stop within 100 feet of the find, and a qualified archeologist shall determine whether the resource requires further study. The qualifies archaeologist shall determine the measures that shall be implemented to protect the discovered resources including, but not limited to, excavation of the finds and evaluation of he finds and evaluation of the finds in accordance with § 15064.5 of the CEQA Guidelines. Measures may include avoidance, preservation in-place, recordation, additional archaeological resting, and data recovery, among other options. Any previously undiscovered resources found during project-related activities within the project area shall be recorded on appropriate Department of Parks and Recreation forms and evaluated for significance. No further ground disturbance shall occur in the immediate vicinity of the discovery until approved by the qualified archaeologist.

The Lead Agency, along with other relevant or tribal officials, shall be contacted upon the discovery of cultural resources to begin coordination on the disposition of the find(s). Treatment of any significant cultural resources shall be undertaken with the approval of the Lead Agency.

**CUL-3:** Upon coordination with the Lead Agency, any archaeological artifacts recovered shall be donated to an appropriate tribal custodian or a qualified scientific institution where they would be afforded applicable cultural resources laws and guidelines.

**Impact 3.4-2**: *Disturb any human remains, including those interred outside of formal cemeteries?*

**Less Than Significant With Mitigation.** California Health and Safety Code Section 7050.5, CEQA Section 15064.5, and Public Resources Code Section 5097.98 mandate the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery. Specifically, California Health and Safety Code Section 7050.5 requires that in the event that human remains are discovered within a project site, disturbance of the site shall remain halted until the coroner has conducted an investigation into the circumstances, manner and cause

of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code. If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes or has reason to believe the human remains to be those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission. Although soil-disturbing activities associated with development in accordance with the proposed project could result in the discovery of human remains, compliance with existing law would ensure that impacts to human remains would not be significant.

Project development would occur on existing disturbed lands; however, further disturbance could potentially uncover human remains. This would be a potentially significant impact. However, Mitigation Measure CUL-4 included herein will reduce the impact to a ***less than significant*** level.

**Mitigation Measures:**

**CUL-4**: If human remains are discovered during project-related activities or operational activities, further excavation or disturbance shall be prohibited pursuant to Section 7050.5 of the California Health and Safety Code. The specific protocol, guidelines, and channels of communication outlined by the Native American Heritage Commission, in accordance with Section 7050.5 of the Health and Safety Code, Section 5097.98 of the Public Resources Code (Chapter 1492, Statutes of 1982, Senate Bill 297), and Senate Bill 447 (Chapter 44, Statutes of 1987) shall be followed. Section 7050.5(c) shall guide the potential Native American involvement, in the event of discovery of human remains, at the direction of the County Coroner.

**Cumulative Impacts**

**Less Than Cumulatively Considerable**. The geographic area for considering cumulative impacts to cultural resources is all of Kings County. Development in Kings County and the San Joaquin Valley has likely resulted in the loss or degradation of historic and/or archaeological resources. As discussed above, implementation of mitigation measures will ensure that Project implementation avoids and/or minimizes a cumulative loss of these resources if they are found during Project activities and would reduce impacts associated with cumulative development to a less than significant level. As such, the proposed projects impact to cultural and tribal resources would be ***less than cumulatively considerable.***

# 3.5 Energy

This section of the DEIR analyzes the Project's potential impacts on energy resources. The information and analysis presented in this Section are based on the Air Quality and Greenhouse Gas / Energy Analysis Report (AQGGA) prepared for this Project (Mitchell Air Quality Consulting, which is included in Appendix B of this document.

## Environmental Setting

Electricity

Electricity, a consumptive utility, is a man-made resource. The production of electricity requires the consumption or conversion of energy resources, including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources, into energy. The delivery of electricity involves a number of system components, including substations and transformers that lower transmission line power (voltage) to a level appropriate for on-site distribution and use. The electricity generated is distributed through a network of transmission and distribution lines commonly called a power grid. Conveyance of electricity through transmission lines is typically responsive to market demands.

*Energy Usage*

Energy usage is typically quantified using the British Thermal Unit (BTU). Total energy consumption in California was 7,967 trillion BTU's in 2018 (the most recent year for which this specific data is available), which equates to an average of 202 million BTU's per capita.[1] Of California's total energy usage, the breakdown by sector is 40 percent transportation, 23 percent industrial, 19 percent commercial, and 18 percent residential.[2] Electricity and natural gas in California are generally consumed by stationary users such as residences and commercial and industrial facilities, whereas petroleum consumption is generally accounted for by transportation-related energy use.

While BTUs measure total energy usage, electricity is generally measured in kilowatt-hours (kWh) which is the standard billing unit for energy delivered to consumers by electrical utilities.

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[1] U.S. Energy Information Administration, California State Profile and Energy Estimates. https://www.eia.gov/state/print.php?sid=CA. Accessed February 2021.
[2] Ibid.

The electricity consumption attributable to Kings County from 2009 to 2019 is shown in Table 3.5-1. As indicated, energy consumption in Kings County varied approximately 22 percent over the last 10 years.

**Table 3.5-1**
**Electricity Consumption in Kings County 2009 – 2019**[3]

| Year | Electricity Consumption (in millions of kilowatt hours) |
|---|---|
| 2009 | 1,585 |
| 2010 | 1,452 |
| 2011 | 1,423 |
| 2012 | 1,680 |
| 2013 | 1,785 |
| 2014 | 1,817 |
| 2015 | 1,774 |
| 2016 | 1,779 |
| 2017 | 1,498 |
| 2018 | 1,758 |
| 2019 | 1,583 |

Natural Gas

Natural gas is a combustible mixture of simple hydrocarbon compounds (primarily methane) that is used as a fuel source. Natural gas consumed in California is obtained from naturally occurring reservoirs, mainly located outside the State, and delivered through high-pressure transmission pipelines. The natural gas transportation system is a nationwide network, and, therefore, resource availability is typically not an issue. Natural gas provides almost one-third of the state's total energy requirements and is used in electricity generation, space heating, cooking, water heating, industrial processes, and as a transportation fuel.

[3] California Energy Commission. Energy Reports. Electricity Consumption by County. https://ecdms.energy.ca.gov/elecbycounty.aspx. Accessed February 2021.

Natural gas is provided to the Project area by Southern California Gas. The natural gas consumption attributable to Kings County from 2009 to 2019 is provided in Table 3.5-2, Natural Gas Consumption in Kings County 2009-2019. Natural gas consumption in Kings County varied 9% over the 10-year span.

**Table 3.5-2**
**Natural Gas Consumption in Kings County 2009 – 2019[4]**

| Year | Natural Gas Consumption (in millions of therms) |
|---|---|
| 2009 | 68 |
| 2010 | 69 |
| 2011 | 71 |
| 2012 | 68 |
| 2013 | 70 |
| 2014 | 66 |
| 2015 | 67 |
| 2016 | 67 |
| 2017 | 64 |
| 2018 | 70 |
| 2019 | 69 |

Transportation Energy

According to the U.S. Energy Administration, transportation accounted for 40 percent of California's total energy consumption in 2018.[5] In 2019, California consumed 15.4 billion gallons

[4] California Energy Commission. Energy Reports. Gas Consumption by County. http://www.ecdms.energy.ca.gov/gasbycounty.aspx Accessed February 2021.
[5] U.S. Energy Information Administration, California State Profile and Energy Estimates. https://www.eia.gov/state/print.php?sid=CA. Accessed February 2021.

of gasoline (including aviation gasoline) and 3.0 billion gallons of diesel fuel.[6] More motor vehicles are registered, and more vehicle miles are traveled in California than in any other state.[7]

According to the Board of Equalization (BOE), statewide taxable sales figures indicate a total of 15,471 million gallons of gasoline and 1,777 million gallons of diesel fuel were sold in 2018.[8] Although exact estimates are not available by County, retail fuel outlet survey data indicates Kings County accounted for approximately 0.50 percent and 0.51 percent of total statewide gasoline and diesel sales, respectively, in 2019.[9]

## Regulatory Setting

### Federal Regulations

*Federal Energy Policy and Conservation Act*

In 1975, Congress enacted the Energy and Policy Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the act, the National Highway Traffic Safety Administration (NHTSA) is responsible for establishing additional vehicle standards.

*Energy Policy Act of 2005*

This Act addresses energy efficiency; renewable energy requirement; oil, natural gas and coal; alternative-fuel use; tribal energy, nuclear security; vehicles and vehicle fuels, hydropower and geothermal energy, and climate change technology. The Act provides revised annual energy reduction goals (two percent per year beginning in 2006), revised renewable energy purchase goals, federal procurement of Energy Star or Federal Energy Management Program-designated products, federal green building standards, and fuel cell vehicle and hydrogen energy system research/demonstration.

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[6] California Department of Tax and Fee Administration. June 2020 – Motor Vehicle Fuel 10 Year Reports and Taxable Diesel Gallons 10 Year Report. https://www.cdtfa.ca.gov/taxes-and-fees/spftrpts.htm. Accessed February 2021.

[7] U.S. Energy Information Administration. California Profile Analysis. Updated January 16, 2020. https://www.eia.gov/state/analysis.php?sid=CA. Accessed February 2021.

[8] California Energy Commission. California Retail Fuel Outlet Annual Reporting (CEC-A15) Results. https://www.energy.ca.gov/media/3874 Accessed February 2021.

[9] California Energy Commission. California Retail Fuel Outlet Annual Reporting (CEC-A15) Results. https://www.energy.ca.gov/media/3874 Accessed February 2021.

*Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA)*

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) was enacted to promote the development of intermodal transportation systems to maximize mobility as well as address national and local interests in air quality and energy. ISTEA contained factors that Metropolitan Planning Organizations (MPOs), such as Kings CAG, were to address in developing transportation plans and programs, including some energy-related factors. To meet the new ISTEA requirements, MPOs adopted explicit policies defining the social, economic, energy, and environmental values that were to guide transportation decisions in that metropolitan area. The planning process for specific projects would then address these policies. Another requirement was to consider the consistency of transportation planning with federal, State, and local energy goals. Through this requirement, energy consumption was expected to become a decision criterion, along with cost and other values that determine the best transportation solution.

*Energy Independence and Security Act of 2007*

The Energy Independence and Security Act of 2007 (EISA) set increased Corporate Average Fuel Economy (CAFÉ) standards for motor vehicles and includes the following provisions related to energy efficiency:

- Renewable fuel standards (RFS)
- Appliance and lighting efficiency standards
- Building energy efficiency

EISA requires increasing levels of renewable fuels to replace petroleum. The EPA is responsible for developing and implementing regulations to ensure transportation fuel sold into the U.S. contains a minimum volume of renewable fuel.

The RFS program regulations were developed in collaboration with refiners, renewable fuel products, and other stakeholders and were created under the Energy Policy Act of 2005 and was expanded and extended by the 2007 EISA. The RFS program established the first renewable fuel volume mandate in the United States. As required under the act, the original RFS program required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. Under EISA, the RFS program was expanded in several key ways that laid the foundation for achieving significant reductions of GHG emissions through the use of renewable fuels, for reducing imported petroleum, and for encouraging the development and expansion of the nation's renewable fuels sector. The EISA-updated program is referred to as RFS2 and includes the following:

- EISA expanded the RFS program to include diesel, in addition to gasoline:
  - EISA increased the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022;
  - EISA established new categories of renewable fuel and set separate volume requirements for each one; and
- EISA was required by the EPA to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces.[10]

Additional provisions of the EISA address energy savings in government and public institutions, promoting research for alternate energy, additional research in carbon capture, international energy programs, and the creation of "green jobs."

*Federal Vehicle Standards*

In 2009, the NHTSA issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011; and, in 2010, the EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016.

In 2010, President Obama issued a memorandum directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams per mile of carbon dioxide (CO2) in model year 2025, on an average industry fleetwide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021, and NHTSA intends to set standards for model years 2022–2025 in a future rulemaking.

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014 – 2018. The standards for CO2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the EPA, this regulatory program will reduce GHG

[10] U.S. EPA. Renewable Fuel Standard Program. Overview for Renewable Fuel Standard. https://www.epa.gov/renewable-fuel-standard-program/overview-renewable-fuel-standard. Accessed February 2021.

emissions and fuel consumption for the affected vehicles by 6 to 23 percent over the 2010 baselines.

In August 2016, the EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018-2027 for certain trailers, and model years 2021-2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO2 emissions by approximately 1.1 billion metric tons (MT) and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program.[11]

In August 2018, The USEPA and NHTSA released a notice of proposed rulemaking called Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks (SAFE Vehicles Rule). This rule would modify the existing CAFÉ standards and tailpipe carbon dioxide emissions standards for passenger cars and light trucks, and establish new standards covering model years 2021-2026. SAFE standards are expected to uphold model year 2020 standards through 2026.[12]

<u>State of California Regulations</u>

*Integrated Energy Policy Report*

Senate Bill 138 (Bowen Chapter 568, Statues of 2002) requires the California Energy Commission to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public and safety (Public Resources Code §25301(a)).

The 2019 Integrated Energy Policy Report[13] (IEPR) was adopted in February 2020, and continues to work towards improving electricity, natural gas, and transportation fuel energy use in California. The 2019 IEPR focuses on a variety of topics such as including the environmental

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[11] U.S. Department of Transportation. Briefing Room. EPA and DOT Finalize Greenhouse Gas and Fuel Efficiency Standards for Heavy-Duty Trucks. https://www.transportation.gov/briefing-room/epa-and-dot-finalize-greenhouse-gas-and-fuel-efficiency-standards-heavy-duty-trucks. Accessed February 2021.

[12] U.S. Department of Transportation. SAFE. The Safer Affordable Fuel-Efficient 'SAFE' Vehicles Rule. https://www.nhtsa.gov/corporate-average-fuel-economy/safe#:~:text=The%20Safer%20Affordable%20Fuel%2DEfficient%20(SAFE)%20Vehicles%20Rule%20proposed,model%20years%202021%20through%202026. Accessed February 2021.

[13] California Energy Commission. 2019 Integrated Energy Policy Report Update. https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2019-integrated-energy-policy-report. Accessed February 2021.

performance of the electricity generation system, landscape-scale planning, transportation fuel supply reliability issues, and the California Energy Demand Forecast.

*State of California Energy Plan*

The CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The Plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators and encouragement of urban designs that reduce vehicle miles traveled and accommodate pedestrian and bicycle access.

*California's Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24)*

California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings, was first adopted in 1978 in response to a legislative mandate to reduce energy consumption in California. Although not originally intended to reduce GHG emissions, increased energy efficiency and reduced consumption of electricity, natural gas, and other fuels would result in fewer GHG emissions from residential and nonresidential buildings subject to this standard, which are updated periodically to allow for the consideration and inclusion of new energy efficiency technologies and methods.

Part 11 of the Title 24 Building Standards Code is referred to as the California Green Building Standards Code (CALGreen Code). The purpose of the CALGreen Code is to "improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories: (1) planning and design; (2) energy efficiency; (3) water efficiency and conservation; (4) material conservation and resource efficiency; and (5) environmental air quality." The CALGreen Code is not intended to substitute or be identified as meeting the certification requirements of any green building program that is not established and adopted by the California Building Standards Commission (CBSC).

CALGreen contains both mandatory and voluntary measures. For nonresidential land uses, there are 39 mandatory measures including, but not limited to, exterior light pollution reduction, wastewater reduction by 20 percent, and commissioning of projects over 10,000 square feet. Two tiers of voluntary measures apply to nonresidential land uses, for a total of 36 additional elective measures.

California's Building Energy Efficiency Standards (Title 24) are updated on an approximately three-year cycle. Starting in 2020, the 2019 standards improve upon existing standards, focusing on three key areas: proposing new requirements for installation of solar photovoltaics for newly constructed low-rise residential buildings; updating current ventilation and Indoor Air Quality (IAQ) requirements; and extending Title 24 Part 6 to apply to healthcare facilities. The 2019 Building Energy Efficiency Standards are approximately 53 percent more efficient than the 2016 Title 24 Energy Standards for residential development and approximately 30 percent more efficient for nonresidential development.

*Warrant-Alquist Energy Resources Conservation and Development Act*

The Warren-Alquist Energy Resources Conservation and Development Act (Warren-Alquist Act), initially passed in 1974 and amended since, created the CEC, the State's primary energy and planning agency. The seven responsibilities of the Commission are: forecasting future energy needs, promoting energy efficiency and conservation through setting standards, supporting energy related research, developing renewable energy resources, advancing alternative and renewable transportation fuels and technologies, certifying thermal power plants 50 megawatts or larger, and planning for and directing State response to energy emergencies. The State Energy Commission regulates energy resources by incentivizing research into energy supply and demand dynamics to reduce the rate of growth of energy consumption. Additionally, the Warren-Alquist Act acknowledges the need for renewable energy resources and encourages the Commission to explore renewable energy options that would be in line with environmental and public safety goals.

*Executive Order B-30-15*

Executive Order B-30-15, 2030 Carbon Target and Adaptation, issued by Governor Brown in April 2015, set a target of reducing GHG emissions by 40 percent below 1990 levels in 2030. To achieve this ambitious target, Governor Brown identified five key goals for reducing GHG emissions in California through 2030:

- Increase the amount of renewable electricity provided state-wide to 50 percent;
- Double energy efficiency savings achieved in existing buildings and make heating fuels cleaner;
- Reduce petroleum use in cars and trucks by up to 50 percent;
- Reduce emissions of short-lived climate pollutants; and
- Manage farms, rangelands, forests, and wetlands to increasingly store carbon.

*Senate Bill (SB) 375 (Sustainable Communities and Climate Protection Act)*

In January 2009, California SB 375, known as the Sustainable Communities and Climate Protection Act, went into effect. The objective of SB 375 is to better integrate regional planning of transportation, land use, and housing to reduce sprawl and ultimately reduce GHG emissions and other air pollutants. SB 375 tasks CARB to set GHG reduction targets for each of California's 18 regional Metropolitan Planning Organizations (MPOs). Each MPO is required to prepare a Sustainable Communities Strategy (SCS) as part of their Regional Transportation Plan (RTP). The SCS is a growth strategy in combination with transportation policies that will show how the MPO will meet its GHG reduction target. If the SCS cannot meet the reduction goal, an Alternative Planning Strategy may be adopted that meets the goal through alternative development, infrastructure, and transportation measures or policies.

In 2010, CARB released the proposed GHG reduction targets for the MPOs. The proposed reduction targets for the Kern COG region were five percent by year 2020 and ten percent by year 2035 through September of 2018, then six percent by 2020 and 13 percent by 2035 beginning in October of 2018.[14]

*Renewables Portfolio Standard Program*

In 2002, California established its Renewables Portfolio Standard (RPS) Program, with the goal of increasing the percentage of renewable energy in the state's electricity mix to 20 percent of retail sales by 2017. The 2003 Integrated Energy Policy Report recommended accelerating that goal to 20 percent by 2010, and the 2004 Energy Report Update further recommended increasing the target to 33 percent by 2020. The state's Energy Action Plan also supported this goal. In 2006 under Senate Bill 107, California's 20 percent by 2010 RPS goal was codified. The legislation required retail sellers of electricity to increase renewable energy purchases by at least one percent each year with a target of 20 percent renewables by 2010. Publicly owned utilities set their own RPS goals, recognizing the intent of the legislature to attain the 20 percent by 2010 target.

In 2008, Governor Schwarzenegger signed Executive Order S-14-08 requiring that "all retail sellers of electricity shall serve 33 percent of their load with renewable energy by 2020." The following year, Executive Order S-21-09 directed CARB to enact regulations to achieve the goal of 33 percent renewables by 2020.

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[14] California Air Resources Board. Regional Plan Targets. https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets. Accessed February 2021.

In 2015, Governor Brown signed Senate Bill 350 to codify ambitious climate and clean energy goals. One key provision of SB 350 is for retail sellers and publicly owned utilities to procure "half of the state's electricity from renewable sources by 2030."

The State's RPS program was further strengthened by SB 100 in 2018. SB 100 revised the State's RPS Program to require retail sellers of electricity to serve 50 percent and 60 percent of the total kilowatt-hours sold to retail end-use customers be served by renewable energy sources by 2026 and 2030, respectively, and to require that 100 percent of all electricity supplied come from renewable sources by 2045.

*Executive Order B-55-18*

In 2018, Governor Brown signed EO B-55-18 to achieve carbon neutrality by moving California to 100 percent clean energy by 2045. This Executive Order also includes specific measures to reduce GHG emissions via clean transportation, energy efficient buildings, directing cap-and-trade funds to disadvantaged communities, and better management of the state's forest land.

*Low Carbon Fuel Standard Regulation*

CARB initially approved the Low Carbon Fuel Standard (LCFS) regulation in 2009, identifying it as one of the nine discrete early action measures in its 2008 Scoping Plan to reduce California's GHG emissions. The LCFS regulation defines a Carbon intensity, or "CI," reduction target (or standard) for each year, which the rule refers to as the "compliance schedule." The LCFS regulation requires a reduction of at least 10 percent in the CI of California's transportation fuels by 2020 and maintains that target for all subsequent years.

CARB has begun the rulemaking process for strengthening the compliance target of the LCFS through the year 2030. For a new LCFS target, the preferred scenario in its 2017 Scoping Plan Update identifies an 18 percent reduction in average transportation fuel carbon intensity, compared to a 2010 baseline, by 2030 as one of the primary measures for achieving the state's GHG 2030 target. Achieving the SB 32 reduction goals will require the use of a low carbon transportation fuels portfolio beyond the amount expected to result from the current compliance schedule.[15]

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[15] California Air Resources Board. CARB amends Low Carbon Fuel Standard for wider impact. https://ww2.arb.ca.gov/index.php/news/carb-amends-low-carbon-fuel-standard-wider-impact. Accessed February 2021.

*Advanced Clean Cars Program*

In 2012, CARB approved the Advanced Clean Cars (ACC) Program (formerly known as Pavley II) for model years 2017-2025. The components of the ACC program are the Low-Emission Vehicle (LEV) regulations and the Zero-Emission Vehicle (ZEV) regulation. The program combines the control of smog, soot, and global warming gases with requirements for greater numbers of zero-emission vehicles into a single package of standards. By 2025, new automobiles under California's Advanced Clean Car program will emit 34 percent less global warming gases and 75 percent less smog-forming emissions.

EO B-48-18, issued by Governor Brown in 2018, establishes a target to have five million ZEVs on the road in California by 2030. This Executive Order is supported by the State's 2018 ZEV Action Plan Priorities Update, which expands upon the State's 2016 ZEV Action Plan. While the 2016 plan remains in effect, the 2018 update functions as an addendum, highlighting the most important actions State agencies are taking in 2018 to implement the directives of EO B-48-18.

*California Environmental Quality Act (CEQA)*

Section 21100(b) of the California Environmental Quality Act (CEQA) Guidelines (State CEQA Guidelines) requires that an EIR include a detailed statement setting forth mitigation measures proposed to minimize a project's significant effects on the environment, including, but not limited to, measures to reduce the wasteful, inefficient, or unnecessary consumption of energy. Appendix F of the State CEQA Guidelines states that, in order to ensure that energy implications are considered in project decisions, the potential energy implications of a project shall be considered in an EIR, to the extent relevant and applicable to the project. Appendix F further states that a project's energy consumption and proposed conservation measures may be addressed, as relevant and applicable, in the Project Description, Environmental Setting and Impact Analysis portions of technical sections, as well as through mitigation measures and alternatives.

In accordance with the intent of Appendix F of the State CEQA Guidelines, which requires an EIR to include a discussion of the potential energy impacts of a proposed project with an emphasis on avoiding or reducing inefficient, wasteful, or unnecessary consumption of energy, this Draft EIR includes relevant information and analyses that address the energy implications of the Project. This section represents a summary of the Project's anticipated energy needs, impacts, and conservation measures.

Local Regulations

*City of Lemoore General Plan 2030*

The following lists goals and policies from the City of Lemoore General Plan pertaining to energy consumption and conservation.

**CD-I-58** Require new development to incorporate passive heating and natural lighting strategies if feasible and practical. These strategies should no include, but are not limited to, the following:

- Using building orientation, mass and form, including façade, roof, and choice of building materials, color, type of glazing, and insulation to minimize heat loss during winter months and heat gain during summer months;
- Designing building openings to regulate internal climate and maximize natural lighting, while keeping glare to a minimum; and
- Reducing heat-island effect of large concrete roofs and parking surfaces.

**CD-I-60** Incorporate green building standards into the Zoning Ordinance and building code to ensure a high level of energy efficiency in new development, retrofitting projects, and City facilities. These standards should include, but are not limited to, the following:

- Require the use of Energy Star® appliances and equipment in new and substantial renovations of residential development, commercial development, and City facilities;
- Require all new development incorporate green building methods to qualify for the equivalent of LEED Certified "Silver" rating or better (passive solar orientation must be a minimum component);
- Require all new residential development to be pre-wired for optional photovoltaic energy systems and/or solar water heating on south facing roofs; and
- Require all new projects that will use more than 40,000 kilowatt hours per year of electricity to install photovoltaic energy systems.

## Thresholds of Significance

Consistent with Appendix G of the CEQA Guidelines, the proposed Project will have a significant impact related to energy if it will:

- Result in a wasteful, inefficient or unnecessary consumption of energy resources;
- Conflict with or obstruct state or local plans.

## Impacts and Mitigation Measures

**Impact 3.5-1:** *Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?*

**Less Than Significant.** Project implementation would increase the demand for electricity and natural gas within the Project area and gasoline consumption in the region during construction and operation of new land use developments.

Construction Energy Consumption

Project construction is assumed to be completed over 16 years. Construction activities would consume energy through the operation of heavy off-road equipment, trucks, and worker traffic. Construction equipment fuel consumption for each of was based on equipment lists generated using CalEEMod default values. The fuel consumption of off-road equipment calculated in this analysis is based on the South Coast Air Quality Management District (SCAQMD) estimated fuel consumption rate of 0.05 gallon per horsepower-hour and the horsepower, usage hours, and load factors from CalEEMod model runs prepared for the Project's air quality analysis.

Based on the anticipated construction schedule and hours of use, construction equipment would result in the consumption of approximately 1,219,180 gallons of diesel fuel over the entire 16-year construction period.

Worker, vendor, and haul trips would result in approximately 3,971,682 VMT over the entire construction period. A countywide average fuel consumption of 40.0 miles per gallon (mpg) for employee vehicles and 9.8 mpg for vendor trucks were obtained from EMFAC 2017. The results indicate that construction trips would consume approximately 101,002 gallons of motor vehicle fuel.

Although the proposed Project would result in the consumption of an estimated 1.2 gallons of diesel and 101,002 gallons of motor vehicle fuels during construction, the Project is expected to achieve energy efficiencies typical for residential projects in California. Construction equipment fleet turnover and increasingly stringent State and federal regulations on engine efficiency, combined with local, State, and federal regulations limiting engine idling times and require recycling of construction debris, would further reduce the amount of transportation fuel demand during Project construction. Considering these reductions in transportation fuel use, the proposed Project would not result in the wasteful and inefficient use of energy resources during construction and impacts would be ***less than significant***. Detailed modeling results are provided in Appendix B. Construction energy use is summarized in Table 3.5-3.

**Table 3.5-3**
**Construction Energy Consumption**

| Activity | Variable | Consumption Rate | Consumption Amount |
|---|---|---|---|
| **Construction Equipment Diesel Fuel Use** | hp-hr of equipment use per project<br>Hours of Use | 0.05 gal/hp-hr<br><br>219,200 hours | 1,219,180 gallons (diesel) |
| **Construction Employee VMT** | VMT/Project | VMT = 3,951,324<br>mpg = 40.0 | 98,904 gallons (all fuels) |
| **Construction Vendor Truck VMT** | VMT/Project | VMT = 20,448<br>mpg = 9.75 | 2,097 gallons (all fuels) |
| Notes:<br>mpg = miles per gallon VMT = vehicle miles traveledhp-hr = horsepower per hourSource of data for construction and VMT: CalEEMod 2016.3.2 Source of Kings County mpg for 2021: EMFAC 2017. Modeling results are provided in Appendix B. | | | |

Operation Energy Consumption

Long-term energy consumption associated with the Project includes electricity and natural gas consumption by residents, electricity required for water supply, treatment, distribution, and wastewater treatment, and motor vehicle travel.

Electricity and Natural Gas Consumption

During operations the proposed Project would consume natural gas for space heating, water heating, and cooking associated with the land uses on the Project site. The natural gas consumption was estimated using the CalEEMod default values and results. The results of the analysis indicate that the Project would consume approximately 16,178,030 thousand British thermal units (kBTU) per year of natural gas per year during operation.

In addition to the consumption of natural gas, the proposed Project would use electricity for lighting, appliances, and other uses associated with the Project. Electricity use during operations was estimated using CalEEMod default values. The results of the modeling indicate that the Project would use approximately 5,698,288 kilowatt-hours (kWh) of electricity per year. Title 24 (2019) requires the installation of solar panels in residential developments. The number of panels installed can vary be due to local conditions and Project design. In addition, some Projects may use community solar instead of rooftop solar installations. Although the energy estimates assume no solar will be installed, most electricity used by the residential portions of the Project is expected to be generated by zero emission renewable sources.

As described above, the proposed Project would result in a long-term increase in demand for electricity from PG&E. However, the Project would be designed to meet the most recent Title 24 standards. Title 24 specifically establishes energy efficiency standards for residential and non-residential buildings constructed in the State of California in order to reduce energy demand and consumption. Title 24 is updated periodically to incorporate and consider new energy efficiency technologies and methodologies. Therefore, impacts from the wasteful or inefficient use of electricity or natural gas during operation of the Project would be ***less than significant***.

Water Treatment, Conveyance, and Distribution

Water used for indoor and outdoor purposes requires electricity for water treatment, conveyance, and distribution. The Project's water demand was calculated from default values for the residential development using CalEEMod. Based on this methodology, the proposed Project is estimated to use approximately 39.1 million gallons of potable water per year as well as 32.2

million gallons of water for irrigation per year. This would result in the consumption of approximately 324,540 kWh of electricity per year.

Although the proposed Project would result in electricity use from the treatment, conveyance, and distribution of water to the Project site, the Project would also require all water fixtures to be compliant with the 2019 California Green Building Standards Code and landscaping compliant with the Model Water Efficiency Landscape Ordinance (MWELO), which would reduce the amount of water used by the Project and would require compliance with regulations relating to drought conditions. Therefore, the Project would not result in the wasteful or inefficient use of electricity for water treatment, conveyance, and distribution and impacts would be ***less than significant.***

Wastewater Service

The Project would be served by the City of Lemoore Wastewater Plant. Project wastewater generation was estimated using CalEEMod default assumptions for indoor water use required by the Project land uses. Project indoor water use of 39.1 million gallons per year would result in the use of 211,811 kWh of electricity per year. Compliance with the 2013 California Green Building Standards Code would reduce the wastewater generated by the Project. Energy used for treating Project wastewater will increasingly be generated by renewable energy sources to comply with RPS standards that apply to the energy utility serving the Project area.

Wastewater service would require an extension of sewer lines to the treatment plant. The energy added for the extension and use of these facilities combined with the Project's estimated electricity and natural gas consumption would not result in substantial new energy generation or transmission infrastructure due to the location and capacity of existing energy infrastructure near the Project site. Additionally, the Project would be constructed over about 16 years, allowing for gradual expansion of facilities. Therefore, the Project would not result in the wasteful or inefficient use of electricity for wastewater treatment, and impacts would be ***less than significant***.

Motor Vehicle Fuel Consumption

During operation of the proposed Project, vehicle trips would be generated by the Project. The Project was modeled with CalEEMod using ITE 10th Edition vehicle trip generation rates and default trip lengths. The results show that the vehicle trips generated would result in approximately 17,822,665 VMT per year. Based on a countywide average fuel consumption of 25.79 mpg from EMFAC 2017 for all vehicle classifications for 2038, the proposed Project would result in the consumption of an estimated 691,069 gallons per year of transportation fuel. By

comparison, approximately 28.7 billion gallons of petroleum are consumed in California annually.[16]

Various federal and State regulations including the Low Carbon Fuel Standard, Pavley Clean Car Standards, and Low Emission Vehicle Program would serve to reduce the Project's transportation fuel consumption progressively into the future. In addition, the Project will include bike lanes, and pedestrian infrastructure that will increase trips by walking and bicycling. Therefore, the Project would be designed to avoid the wasteful and inefficient use of transportation fuel during operations and impacts would be ***less than significant***.

State and federal regulatory requirements addressing fuel efficiency are expected to increase fuel efficiency over time as older, less fuel-efficient vehicles are retired. The efficiency standards and light/heavy vehicle efficiency/hybridization programs contribute to increased fuel efficiency and therefore would reduce vehicle fuel energy consumption rates over time. The annual vehicular energy consumption calculated for the proposed Project was based on 2038 average rates for Kings County. While the Project would increase the consumption of gasoline and diesel proportionately with projected population growth, the increase would be accommodated within the projected growth as part of the energy projections for the Sstate and the region and would not require the construction of new regional energy production facilities. Therefore, energy impacts related to fuel consumption/efficiency during Project operations would be ***less than significant.***

Impact Summary

As described above, the Project would not result in the wasteful, inefficient, or unnecessary use of energy due to Project design features that will comply with the City's design guidelines and regulations that apply to the Project, such as Title 24 Building Energy Efficiency Standards and the California Green Building Standards Code that apply to residential buildings. The installation of solar panels required by 2019 Title 24 standards is expected to offset most electricity used by Project residences. Furthermore, various federal and State regulations including the Low Carbon Fuel Standard, Pavley Clean Car Standards, and Low Emission Vehicle Program would serve to reduce the transportation fuel demand by the Project.

[16] EIA. 2020. "California State Profile and Energy Estimates – Table F16: Total Petroleum Consumption Estimates, 2017." Accessed June 2021. https://www.eia.gov/state/seds/data.php?incfile=/state/seds/sep_fuel/html/fuel_use_pa.html&sid=US&sid=CA

With the adherence to the increasingly stringent building and vehicle efficiency standards as well as implementation of the Project's design features that would reduce energy consumption, the proposed Project would not contribute to a cumulative impact to the wasteful or inefficient use of energy. As such, the Project would not result in a significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation. A summary of the Project's estimated operational energy consumption is provided in Table 3.5-4.

In summary, although project implementation would result in an increase in petroleum use during construction and operation, over time vehicles would use less petroleum due to advances in fuel economy. Given these considerations, energy consumption associated with the Project would not result in the unnecessary, inefficient, or wasteful use of energy resources. This impact would be ***less than significant***.

**Table 3.5-4**
**Operational Energy Consumption**

| Activity | Variable | Consumption Rate | Consumption Amount |
|---|---|---|---|
| Residential Electricity | 547 SFR DU<br><br>204 MFR DU | 8,761 kWh/DU/Yr. SFR<br><br>4,678 kWh/DU/Yr. MFR | SFR 4.75 MWh/Yr.<br><br>MFR 0.944 MWh/Yr. |
| Residential Natural Gas | | 26,145 kBTU/DU/Yr. SFR<br><br>14,136 kBTU/DU/Yr. MFR | SFR 13,442,900 kBTU/Yr.<br><br>MFR 2,735,130 kBTU/Yr. |
| Water Supply, Treatment, and Conveyance and Wastewater Treatment | Water Use (Mgal) | 71.4 Mgal/yr | 324,540 kWh/year |
| Transportation | VMT/year<br>mpg all Fuels | VMT/year = 17,822,665 miles<br>mpg = 25.8 | 691,069 gallons/year Transportation Fuels |
| Notes: | | | |

| Activity | Variable | Consumption Rate | Consumption Amount |
|---|---|---|---|
| mpg = miles per gallon Mgal = million gallons VMT = vehicle miles traveledDU = Dwelling Unit<br>kW = kilowatts kWh = kilowatt-hours MWh = megawatt-hours MMBTU = million British thermal units<br>Source of data for energy use and VMT: CalEEMod 2016.3.2.<br>Source of Kings County mpg for 2038: EMFAC 2017.<br>Modeling results are provided in Appendix B. | | | |

**Mitigation Measures**

None Required.

**Impact 3.5-2:** *Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?*

**Less Than Significant.** The City of Lemoore has not adopted local plans specifically addressing renewable energy and energy efficiency. However, the City of Lemoore 2030 General Plan includes goals and policies related to energy efficiency. The following policies are applicable to new development:

- **CD-I-58:** Require new development to incorporate passive heating and natural lighting strategies to the extent feasible and practical. These strategies should include, but are not limited to, the following:
  - Using building orientation, mass and form, including façade, roof, and choice of building materials, color, type of glazing, and insulation to minimize heat loss during winter months and heat gain during the summer months;
  - Designing building openings to regulate internal climate and maximize natural lighting, while keeping glare to a minimum; and
  - Reducing heat-island effect of large concrete roofs and parking surfaces.

- **CD-I-60:** Incorporate green building standards into the Zoning Ordinance and building code to ensure a high level of energy efficiency in new development, retrofitting projects, and City facilities. These standards should include, but are not limited to, the following:
  - Require the use of Energy Star® appliances and equipment in new and substantial renovations of residential development, commercial development, and City facilities;

- Require all new City facilities and new residential development incorporate green building methods to qualify for the equivalent of LEED Certified "Silver" rating or better (passive solar orientation must be a minimum component);
- Require all new residential development to be pre-wired for optional photovoltaic roof energy systems and/or solar water heating on south facing roofs; and
- Require all new projects that will use more than 40,000 kilowatt hours per year of electricity to install photovoltaic energy systems.

The City of Lemoore 2030 General Plan was adopted in 2008. Since that time, Title 24 Building Energy Efficiency Standards have been revised on multiple occasions to increase the energy efficiency of buildings in California. The standards include provisions for windows, insulation, and lighting that have substantially increased the energy efficiency of residential and non-residential structures with the goal of producing all zero net energy buildings by 2030. Therefore, compliance with Title 24 would allow projects to be consistent with policies CD-I-59 and CD-I-60. The CalGreen Code adds additional sustainability requirements to development projects and will further support project consistency with these energy related policies. Therefore, the Project would not conflict with or obstruct the local plan for renewable energy or energy efficiency.

The Project was reviewed for consistency with State of California energy plans. The ARB 2008 Scoping Plan required by AB 32 and the ARB 2017 Scoping Plan provide the State's strategy for achieving legislated GHG reduction targets. Although the primary purpose of the Scoping Plans is to reduce GHG emissions, the strategies to achieve the GHG reduction targets rely on the use of increasing amounts of renewable fuels under the LCFS and RPS, and energy efficiency with updates to Title 24 and the CalGreen Code. The 2019 California Energy Efficiency Action Plan addresses issues pertaining to energy efficiency in California's buildings, industrial, and agricultural sectors. Buildings constructed to implement the Project will meet the latest efficiency standards. Vehicles and equipment will meet the latest fuel efficiency standards and use fuels subject to the LCFS.

The Project is consistent with applicable plans and policies and would not result in wasteful or inefficient use of nonrenewable energy sources; therefore, impacts would be ***less than significant***.

**Mitigation Measures**

None Required.

### Cumulative Impacts

**Less Than Cumulatively Considerable.** Development associated with buildout of the proposed Project would require the consumption of electricity, natural gas, and vehicle fuel resources to accommodate growth. As discussed above, new development and land use turnover would be required to comply with Statewide mandatory energy requirements outlined in Title 24, Part 6, of the California Code of Regulations (the CALGreen Code), which could decrease estimated electricity and natural gas consumption in new and retrofitted structures. In addition, cumulative projects would be required to meet or exceed the Title 24 building standards, as applicable, further reducing the inefficient use of energy. Future development would also be required to meet even more stringent requirements, including the objectives set forth in the AB 32 Scoping Plan, which seek to make all newly constructed residential homes produce a sustainable amount of renewable energy through the use of on-site photovoltaic solar systems. Furthermore, various federal and state regulations, including the Low Carbon Fuel Standard, Pavley Clean Car Standards, and Low Emission Vehicle Program, would serve to reduce the transportation fuel demand of cumulative projects. Furthermore, energy consumed by development in the Project area would continue to be subject to the regulations described in the Regulatory Setting of this Section. For these reasons, the electrical and natural gas energy that would be consumed by the Project is not considered unnecessary, inefficient, or wasteful. Impacts are ***less than cumulatively considerable.***

# 3.6 Geology/Soils

This section of the DEIR identifies potential impacts of implementing the proposed Project on geology and soils. The analysis in this section is largely based on publicly available information.

## Environmental Setting

### Geologic Setting

The Lemoore Planning Area lies just east of the trough of California's Central Valley. The Central Valley stretches 500 miles in a northwest to southeast direction and averages about 40 miles in width between the Coast Ranges in the west and the Sierra Nevada in the east. The whole region is characterized by flat-lying sedimentary rocks overlain by alluvial soils up to 200 feet deep near the Sacramento River.[1]

### Topography

The Project is located at an elevation of 230 feet above mean sea level on the open flats of the San Joaquin Valley. Currently, this region can be characterized as a dry, open valley bottom now utilized for suburban or agricultural uses. The Project site is north of the former shoreline of Tulare Lake, at roughly 200 feet above mean sea level. Prior to reclamation and channelization, the region would have been a low-lying, water-rich area characterized by streams, sloughs, marshes, and swamps. Occasionally inundated by floodwaters, in many years portions of this region would have been swampy during the winter rainy season and marsh land during other parts of the year. Historical and recent land-use has changed the vegetation that was once present within and near the Project area. The immediate Project location historically most likely fell within the Valley Grassland community, however, with Riparian Woodlands present along streams and freshwater marshes common in the area.[2]

### Soils

Soil properties have a significant bearing on land planning and development. Sixteen soil types have been mapped by the U.S. Department of Agriculture in the Lemoore area including urban land and water. Due to the range of soil types located in the Planning Area—with soil properties

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[1] City of Lemoore General Plan, 2030. Chapter 8: Safety and Noise. Page 8-1. https://lemoore.com/wp-content/uploads/2018/01/lemoore_gp_ch8_safety_noise_3_20_2012.pdf. Accessed June 2021.

[2] Phase I Survey, Lacey Ranch Project, Lemoore, Kings County, California. Prepared by ASM Affiliates, Inc. May 2021. Appendix C. Page 5.

resulting in cutbanks caves, flooding, shrink-swells (expansive soils, described below), excess wetness, excess salt, excess sodium or droughty—various building site development restrictions exist in the Planning Area and affect land development costs. On average, Kimberlina and Nord soil types have the most favorable properties for development while Gepford, Goldberg, Pitco, and Vanguard soils have the least favorable properties. Soils with only slight or moderate soil restrictions comprise 8,900 acres or 73 percent of the Lemoore Planning Area. These soils are concentrated on the eastern portion of the Planning Area. Much of the west side contains soils with more severe building site development restrictions. None of the soils in the Planning Area comprise a significant direct health or safety hazard to residents.[3]

The Project site is underlain by a mix of Nord complex and Whitewolf coarse sandy loam. It occupies flat and level terrain (0–1% slopes) at an elevation of 212–220 feet above mean sea level.[4]

*Expansive Soils*

Expansive soils possess a "shrink-swell" characteristic. Shrink-swell is the cyclic change in volume (expansion and contraction) that occurs in fine-grained clay sediments from the process of wetting and drying. Structural damage may occur over a long period of time, usually the result of inadequate soil and foundation engineering, or the placement of structures directly on expansive soils. Several portions of the Planning Area have soil with high to moderate shrink-swell potential.[5]

<u>Faults</u>

There are no known active seismic faults in Kings County or its immediate vicinity. Beyond surface rupture along the fault zone, potential hazards related to major earthquakes include ground shaking and related secondary ground failures. The primary earthquake hazard affecting the area is ground shaking as opposed to surface rupture or ground failure. According to a 1974 5-County Seismic Study, Kings County is in an area where amplification of shaking that would affect low- to medium-rise structures is relatively high. The vast majority of deaths during

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[3] City of Lemoore General Plan, 2030. Chapter 7: Conservation and Open Space. Pages 7-6 and 7-7. https://lemoore.com/wp-content/uploads/2018/01/lemoore_gp_ch7_conserv_open_space_082208_v2.pdf. Accessed June 2021.

[4] Biological Resource Evaluation for the Lemoore Residential Development Project. Prepared by Colibri Ecological Consulting, LLC. December 2020. Page 11.

[5] City of Lemoore General Plan, 2030. Chapter 8: Safety and Noise. Page 8-2. https://lemoore.com/wp-content/uploads/2018/01/lemoore_gp_ch8_safety_noise_3_20_2012.pdf. Accessed June 2021.

earthquakes are the result of structural failure mainly due to ground shaking. Most such deaths are preventable with existing knowledge of design and construction methods.[6]

Ground shaking intensities are measured using the modified Mercalli Intensity Scale. Earthquakes of M5.0 or greater have occurred on fault systems in the region, including the San Andreas Fault. The closest active fault is the Nunez fault located in western Fresno County. The Nunez fault is a 4.2-km-long, north-south-trending, right-reverse, oblique-slip fault situated about 8 miles northwest of Coalinga. Surface rupture occurred along this fault in the 1983 Coalinga earthquakes, which had a magnitude of 6.7. This was followed by another earthquake with magnitude of 6.0 in 1985. The location of this fault, however, is far away from Lemoore and aftershocks during both earthquakes did not cause any damage. Secondary natural hazards associated with earthquakes result from the interaction of ground shaking with existing ground instabilities, and include liquefaction, settlement or subsidence, landslides and seiches. While some of these secondary hazards are a concern to other parts of Kings County and the 5-County Seismic Study region, none are considered of particular concern to the Lemoore Planning Area because of its distance from the major regional fault (San Andreas Fault), the lack of steep slopes, and the clay composition of area soils.[7]

Asbestos

The term "asbestos" is used to describe a variety of fibrous minerals that, when airborne, can result in serious human health effects. Naturally occurring asbestos is commonly associated with ultramafic rocks and serpentinite. Ultramafic rocks, such as dunite, peridotite, and pyroxenite are igneous rocks comprised largely of iron-magnesium minerals. As they are intrusive in nature, these rocks often undergo metamorphosis, prior to their being exposed on the Earth's surface. The metamorphic rock serpentinite is a common product of the alteration process. The Department of Conservation Division of Mines and Geology has mapped naturally occurring asbestos in Kings County. There are no mapped deposits of naturally occurring asbestos within the Project area, or in the entire City of Lemoore. The nearest deposits are located approximately 20 miles southwest of the Project site near the City of Huron.[8]

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[6] Ibid.
[7] Ibid. Page 8-3.
[8] Department of Conservation, Areas with Potential for Naturally Occurring Asbestos , map. https://www.arcgis.com/apps/webappviewer/index.html?id=da4b648958844134adc25ff002dbea1c Accessed June 2021.

### Paleontological Setting

Paleontological resources are the mineralized (fossilized) remains of prehistoric plant and animal life exclusive of human remains or artifacts. Fossil remains such as bones, teeth, shells, and leaves are found in geologic deposits (rock formations) where they were originally buried. Fossil remains are important as they provide indicators of the Earth's chronology and history. These limited and nonrenewable resources provide invaluable scientific and educational data and are afforded protection under CEQA. The proposed Project site has previously and is currently being used for agricultural purposes. The site has no natural streams, rivers or geologic features on or near that site which may suggest the existence of paleontological resources.

## Regulatory Setting

### Federal Regulations

*Earthquake Hazards Reduction Act*

The Earthquake Hazards Reduction Act was enacted in 1997 to "reduce the risks to life and property from future earthquakes in the United States through the establishment and maintenance of an effective earthquake hazards and reduction program." To accomplish this, the act established the National Earthquake Hazards Reduction Program (NEHRP). This program was significantly amended in November 1990 by the National Earthquake Hazards Reduction Program Act (NEHRPA), which refined the description of agency responsibilities, program goals, and objectives.

NEHRP's mission includes improved understanding, characterization, and prediction of hazards and vulnerabilities; improvement of building codes and land use practices; risk reduction through post-earthquake investigations and education; development and improvement of design and construction techniques; improvement of mitigation capacity; and accelerated application of research results.

The NEHRPA designates FEMA as the lead agency of the program and assigns it several planning, coordinating, and reporting responsibilities.

*Paleontological Resources*

A variety of federal statutes specifically address paleontological resources. They are generally applicable to a project if that project includes federally owned or federally managed lands, or

involves a federal agency license, permit, approval, or funding. The first of these, established in the United States Code (USC), is the Antiquities Act of 1906 (54 USC 320301–320303 and 18 USC 1866[b]), which calls for protection of historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest on federally administered lands, the latter of which would include fossils. The Antiquities Act establishes a permit system for the disturbance of any object of antiquity on federal land, and also sets criminal sanctions for violation of these requirements. The Antiquities Act was extended to specifically apply to paleontological resources by the Federal-Aid Highways Act of 1958. More recent federal statutes that address the preservation of paleontological resources include the National Environmental Policy Act, which requires the consideration of important natural aspects of national heritage when assessing the environmental impacts of a project (P.L. 91-190, 31 Stat. 852, 42 USC 4321–4327). The Federal Land Policy Management Act of 1976 (P.L. 94-579; 90 Stat. 2743, USC 1701–1782) requires that public lands be managed in a manner that will protect the quality of their scientific values, and Title 40 of the Code of Federal Regulations, Section 1508.2, identifies paleontological resources as a subset of scientific resources. The Paleontological Resources Preservation Act (Title VI, Subtitle D, of the Omnibus Land Management Act of 2009) is the primary piece of federal legislation.

<u>State Regulations</u>

*Alquist-Priolo Earthquake Fault Zoning Act*

The Alquist-Priolo Earthquake Fault Zoning Act (formerly the Alquist-Priolo Special Studies Zone Act), signed into law December 1972, requires the delineation of zones along active faults in California. The purpose of the Alquist-Priolo Act is to regulate development on or near active fault traces to reduce the hazards associated with fault rupture and to prohibit the location of most structures for human occupancy across these traces.

*Seismic Hazards Mapping Act*

"Under the Seismic Hazards Mapping Act, the State Geologist is responsible for identifying and mapping seismic hazards zones as part of the California Geologic Survey (CGS). The CGS provides zoning maps of non-surface rupture earthquake hazards (including liquefaction and seismically induced landslides) to local governments for planning purposes. These maps are intended to protect the public from the risks associated with strong ground shaking, liquefaction, landslides or other ground failure, and other hazards caused by earthquakes. For projects within seismic hazard zones, the Seismic Hazards Mapping Act requires developers to conduct geological investigations and incorporate appropriate mitigation measures into project designs before building permits are issued."

*California Building Code*

Title 24, Part 2, of the California Code of Regulations, also known as the California Building Code (CBC), sets forth minimum requirements for building design and construction. Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. The CBC is reviewed every three years by the California Building Standards Commission. The Commission makes certain State modifications and adopts the new code edition for use throughout the State. Once the Commission votes to adopt the new code edition, it will become effective on the first of January of the upcoming year, regardless of whether local cities or counties formally adopt it.

The California Building Standards Code is a compilation of three types of building standards from three different origins:

- Building standards that have been adopted by state agencies without change from building standards contained in national model codes;
- Building standards that have been adopted and adapted from the national model code standards to meet California conditions; and
- Building standards, authorized by the California Legislature, that constitute extensive additions not covered by the model codes that have been adopted to address particular California concerns.

In the context of earthquake hazards, the California Building Standards Code's design standards have a primary objective of assuring public safety and a secondary goal of minimizing property damage and maintaining function during and following a seismic event. Recognizing that the risk of severe seismic ground motion varies from place to place, the California Building Standards Code - Seismic Code provisions will vary depending on location (Seismic Zones 0, 1, 2, 3, and 4; with 0 being the least stringent and 4 being the most stringent). The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients, which are used to determine a Seismic Design Category (SDC) for a project. The SDC is a classification system that combines the occupancy categories with the level of expected ground motions at the site and ranges from SDC A (very small seismic vulnerability) to SDC E/F (very high seismic vulnerability and near a major fault). Design specifications are then determined according to the SDC.

Counties and cities may modify their adoption of the California Buildings Standard Code to address local conditions. Most California cities and counties modify the State adopted version of the Building Standards Code to address local circumstances related to the local climate, topography, or geology. Since modifications cannot be less restrictive, California Building

Standards Code provides a minimum standard for protecting public health, safety and welfare that is applicable throughout the Planning Area and study area for cumulative impacts.

*Public Resources Code Section 5097.5 and Section 30244*

Other state requirements for paleontological resource management are included in Public Resources Code Section 5097.5 and Section 30244. These statutes prohibit the removal of any paleontological site or feature from public lands without permission of the jurisdictional agency, define the removal of paleontological sites or features as a misdemeanor, and require reasonable mitigation of adverse impacts to paleontological resources from developments on public (state, county, city, district) lands.

*Porter-Cologne Water Quality Control Act*

Under the Porter-Cologne Water Quality Control Act, waters of the state fall under the jurisdiction of the appropriate Regional Water Quality and Control Board (RWQCB). Under the act, the RWQCB must prepare and periodically update water quality control basin plans. Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control nonpoint and point sources of pollution to achieve and maintain these standards. Projects that affect wetlands or waters must meet waste discharge requirements of the RWQCB, which may be issued in addition to a water quality certification or waiver under CWA Section 401.

*State Regional Water Quality Control Board, Stormwater General Construction Permit*

The California State Water Resources Control Board (SWRCB) allocates water rights, adjudicates water right disputes, develops statewide water protection plans, establishes water quality standards, and guides the nine RWQCBs in the major watersheds of the state. The joint authority of water allocation and water quality protection enables the SWRCB to provide comprehensive protection of California's waters.

In 1999, the state adopted the NPDES General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit) (SWRCB Order No. 2012-0006-DWQ, NPDES No. CAS000002). The Construction General Permit requires that construction sites with 1 acre or greater of soil disturbance, or less than 1 acre but part of a greater common plan of development, apply for coverage for discharges under the Construction General Permit by submitting a Notice of Intent for coverage, developing a SWPPP, and implementing BMPs to address construction site pollutants.

The SWPPP should contain a site map that shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project. site The SWPPP must list the BMPs the discharger will use to protect stormwater runoff and the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program, a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Section A of the Construction General Permit describes the elements that must be contained in a SWPPP. Enrollment under the Construction General Permit is through the Stormwater Multiple Application and Report Tracking System. Additionally, the SWRCB is responsible for implementing the CWA, and issues NPDES permits to cities and counties through the individual RWQCBs.

<u>Local Regulations</u>

*City of Lemoore General Plan, 2030*

The following lists goals and policies from the City of Lemoore 2030 General Plan pertaining to geology and soils that are applicable to the proposed Project.

Policy COS-I-34 — If, prior to grading or construction activity, an area is determined to be sensitive for paleontological resources, retain a qualified paleontologist to recommend appropriate actions. Appropriate action may include avoidance, preservation in place, excavation, documentation, and/or data recovery, and shall always include preparation of a written report documenting the find and describing steps taken to evaluate and protect significant resources.

Policy SN-G-1 — Minimize risks of property damage and personal injury posed by seismic hazards, soil hazards, and erosion.

Policy SN-I-1 — Review proposed development sites at the earliest stage of the planning process to locate any potential geologic or seismic hazard.

*Following receipt of a development proposal, engineering staff will review the plans to determine whether a geotechnical review is required. If the review is*

*required, then the applicant will be referred to geotechnical experts for further examination.*

Policy SN-I-2 Maintain and enforce appropriate building standards and codes to avoid or reduce risks associated with geologic constraints and to ensure that all new construction is designed to meet current safety regulations.

Policy SN-I-6 Control erosion of graded areas with vegetation or other acceptable methods.

*Plant materials should not be limited to hydro seeding and mulching with annual grasses. Trees add structure to the soil and take up moisture while adding color and diversity*

## Thresholds of Significance

The thresholds of significance for this section are established by the CEQA Checklist Item.

- Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving:
  - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?
  - Strong seismic ground shaking?
  - Seismic-related ground failure, including liquefaction?
  - Landslides?
- Result in substantial soil erosion or the loss of topsoil?
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994) creating substantial direct or indirect risks to life or property?
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

- o Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?

The lead agency determined in the Notice of Preparation/Initial Study (NOP/IS), located in Appendix A of this EIR, that the proposed project would not result in significant impacts to some of these environmental issue areas, and that no further analysis would be required in the EIR. Thus, the following issue area is scoped out of further analysis in this EIR:

- *The project would have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater*

## Impacts and Mitigation Measures

**Impact 3.6-1:** *Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:*

*i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.*

*ii) Strong seismic ground shaking?*

*iii) Seismic-related ground failure, including liquefaction?*

*iv) Landslides?*

**Less Than Significant With Mitigation.** This impact analysis evaluates the proposed Project's potential to expose persons or structures to seismic hazards (fault rupture, ground shaking, ground failure, and landsliding). Each of these hazards and their potential environmental impacts are discussed below.

<u>Fault Rupture</u>

The site is not located within the boundaries of an Earthquake Fault Zone for fault rupture hazard as defined by the Alquist-Priolo Earthquake Fault Zoning Act and no faults are known to pass through the property. There are no known active seismic faults in Kings County or its immediate

vicinity.[9] The nearest active earthquake fault zones (evidence of displacement within the past 11,700 years) are the Nunez Fault, Pond Fault, and the San Andreas Fault Zone located approximately 39 miles southwest, 51 miles southeast, and 46 miles southwest, respectively, of the Project site.[10] Thusly, there is no significant risk of ground rupture and therefore this impact is determined to be ***less than significant.***

Strong Ground Shaking

The closest active fault is the Nunez fault located in western Fresno County. The Nunez fault is a 4.2-km-long, north-south-trending, right-reverse, oblique-slip fault situated about 8 miles northwest of Coalinga. Surface rupture occurred along this fault in the 1983 Coalinga earthquakes, which had a magnitude of 6.7. This was followed by another earthquake with magnitude of 6.0 in 1985. The location of this fault, however, is far away from Lemoore and aftershocks during both earthquakes did not cause any damage.[11]

Secondary natural hazards associated with earthquakes result from the interaction of ground shaking with existing ground instabilities, and include liquefaction, settlement or subsidence, landslides and seiches. While some of these secondary hazards are a concern to other parts of Kings County and the 5-County Seismic Study region, none are considered of particular concern to the Lemoore Planning Area because of its distance from the major regional fault (San Andreas Fault), the lack of steep slopes, and the clay composition of area soils.[12]

Existing structures in the Planning Area could be affected by the earthquake-induced ground shaking described above, but to varying degrees based on length, intensity, and distance of the earthquake from a given building. New structures are required to adhere to current California Uniform Building Code (CUBC) standards, providing adequate design, construction and maintenance of structures to prevent exposure of people and structures to major geologic hazards. The use of flexible utility connections, building anchors, and adequately reinforced concrete can reduce the loss of life and damage to buildings for human occupancy. The

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[9] City of Lemoore General Plan, 2030. Chapter 8: Safety and Noise. Page 8-2. https://lemoore.com/wp-content/uploads/2018/01/lemoore_gp_ch8_safety_noise_3_20_2012.pdf. Accessed June 2021.

[10] California Department of Conservation, California Geological Survey. Fault Activity Map of California. https://maps.conservation.ca.gov/cgs/fam/. Accessed June 2021.

[11] City of Lemoore General Plan, 2030. Chapter 8: Safety and Noise. Page 8-2 and 8-3. https://lemoore.com/wp-content/uploads/2018/01/lemoore_gp_ch8_safety_noise_3_20_2012.pdf. Accessed June 2021.

[12] City of Lemoore General Plan, 2030. Chapter 8: Safety and Noise. https://lemoore.com/wp-content/uploads/2018/01/lemoore_gp_ch8_safety_noise_3_20_2012.pdf. Accessed May 2021. Page 8-3.

requirements of Zone II of the Uniform Building Code are considered adequate for normal facilities in the Lemoore Planning Area.[13]

In addition, Mitigation Measure GEO-1 would require a final design-level geotechnical report evaluating soil conditions and geologic hazards, performed by a California licensed geotechnical engineer consistent with CUBC requirements. GEO-1 would also require a California geotechnical engineer be hired by the project proponent to design project facilities to withstand probable seismically induced ground shaking. All grading and construction on site would adhere to the specifications, procedures, and site conditions contained in the final design plans, which would be fully compliant with the seismic recommendations provided by the California-registered professional engineer in accordance with California and the City Building Code requirements. The required measures would encompass site preparation, foundation specifications, and protection measures for any buried metal. The final structural designs would be subject to approval and follow-up inspection by the City Building Inspection Division. Final design requirements would be provided to the on-site construction supervisor and the City Building Inspector to ensure compliance. A copy of the approved design would be submitted to the City Community Development Department.

Therefore, with foundation and structural design in accordance with the City of Lemoore General Plan, current CUBC standards and implementation of Mitigation Measure GEO-1, ground shaking impacts on the proposed Project area would be ***less than significant.***

<u>Seismic Related Ground Failure (including Liquefaction)</u>

Liquefaction is a phenomenon where earthquake-induced ground vibrations increase the pore pressure in saturated, granular soils until it is equal to the confining, overburden pressure. When this occurs, the soil can completely lose its shear strength and enter a liquefied state. The possibility of liquefaction is dependent upon grain size, relative density, confining pressure, saturation of the soils, and intensity and duration of ground shaking. In order for liquefaction to occur, three criteria must be met: "low density", coarse-grained (sandy) soils, a groundwater depth of less than about 50 feet, and a potential for seismic shaking from nearby large-magnitude earthquake. According to the Project's Phase I ESA (See Appendix E), the depth of groundwater at the site approximately 20 feet below ground. However, due to of its distance from the major regional fault (San Andreas Fault), the lack of steep slopes, and the clay composition of area soils,

[13] Ibid. 8-4.

there is a negligible risk of liquefaction occurring at the Project site during a design level seismic event.

However, the project proponent would be required to perform a design-level geotechnical report that would evaluate and address the site-specific liquefaction potential of the project; this would be required per GEO-1, prior to the issuance of any building or grading permits. The design-level geotechnical report would provide specific requirements necessary for design of the structures in relation to seismic-related ground failure, including liquefaction, as required by GEO-1. These design requirements would comply with CUBC and State of California design standards, Chapter 16, which are required by law for all new structures in the City. These design standards and codes were established to reduce the potential impacts to structures from seismic-related ground failure, including liquefaction; project impacts would be less than significant

After implementation of Mitigation Measure GEO-1, the Project's impacts would be reduced to a ***less than significant*** level**.**

<u>Landsliding</u>

There are no substantial slopes on or near the Project site. Therefore, the opportunity for slope failure in response to the long-term geologic cycle of uplift, mass wasting, and difference of slopes is unlikely. Compliance with the recommendations in the City of Lemoore General Plan and all applicable seismic design standards of the California Building Standards Code would ensure that design features would not present a hazard involving landslides. After implementation of Mitigation Measure GEO-1, the Project's impacts would be reduced to a ***less than significant*** level**.**

**Mitigation Measures**

**GEO-1**: Prior to the issuance of building or grading permits for the project, the project proponent shall conduct a full geotechnical study to evaluate soil conditions and geologic hazards on the project site and submit it to the City of Lemoore Building Division for review and approval. The project proponent shall retain a California registered and licensed geotechnical engineer to design the project facilities to withstand probable seismically induced ground shaking at the site. All grading and construction on site shall adhere to the specifications, procedures, and site conditions contained in the final design plans, which shall be fully compliant with the seismic recommendations of the California registered professional engineer.

a. The geotechnical study must be signed by a California registered and licensed professional geotechnical engineer or engineering geologist and must include the following:

    I. Location of fault traces and potential for surface rupture and ground shaking potential.
    II. Maximum considered earthquake and associated ground acceleration for design.
    III. Potential for seismically induced liquefaction, landslides, differential settlement, and unstable soils.
    IV. Stability of any existing or proposed cut-and-fill slopes.
    V. Identification of collapsible or expansive soils.
    VI. Foundation material type.
    VII. Potential for wind erosion, water erosion, sedimentation, and flooding.
    VIII. Location and description of unprotected drainage that could be impacted by the proposed development.
    IX. Recommendations for placement and design of facilities, foundations, and remediation of unstable ground.

b. The project proponent shall determine the final siting of project facilities based on the results of the geotechnical study and implement recommended measures to minimize geologic hazards.

c. The City of Lemoore Building Division shall evaluate any final facility siting design developed prior to the issuance of any building or grading permits to verify that geological constraints have been avoided or mitigated.

d. The final structural design shall be subject to approval and follow-up inspection by the City of Lemoore Building Division. Final design requirements shall be provided to the on-site construction supervisor and the City of Lemoore Building Inspector to ensure compliance. A copy of the approved design shall be submitted to the City of Lemoore Community Development Department.

**Impact 3.6-2:** *Result in substantial soil erosion or the loss of topsoil?*

**Less Than Significant Impact With Mitigation**. The Project site is underlain by a mix of Nord complex and Whitewolf coarse sandy loam. It occupies flat and level terrain (0–1% slopes) at an elevation of 212–220 feet above mean sea level.[14]

Construction activities associated with the Project involves ground preparation work for the proposed development of the site. These activities could expose barren soils to sources of wind or water, resulting in the potential for erosion and sedimentation on and off the Project site.

Grading of the Project site would be minimized and would follow the existing topography of the Project site to the greatest extent feasible to limit potential erosion and maintain existing drainage patterns. The temporary and permanent site roadways would be graded and compacted prior to road construction. Any existing vegetation would be scarified and grubbed for the development of temporary and permanent access roads, and the soil surface would be smoothed, moisture conditioned, and compacted with a crown in the center and swale on the side to prepare the roadway surface. Grading, excavation, removal of vegetation cover, development of access roads, and disturbance of soils during construction activities would result in the disturbance of an area greater than one acre and would temporarily increase erosion, runoff, and sedimentation. Construction activities would also result in soil compaction and wind erosion effects that could adversely affect soils at the construction sites and staging areas.

During grading, erosion prevention measures would be implemented, including the separation of topsoil, whereby topsoil is separated and stockpiled separately from subsoil and stabilized to prevent erosion. When Project construction is complete, stripped subsoil and topsoil would be replaced as required. Other erosion and sediment control measures would include watering for dust control and soil compaction during grading and throughout construction activities.

The Applicant and/or contractor would be required to employ appropriate sediment and erosion control BMPs as part of a Stormwater Pollution Prevention Plan (SWPPP) that would be required and submitted to the Central Valley Regional Water Quality Control Board (Central Valley RWQCB) in accordance with the National Pollution Discharge Elimination System (NPDES). In addition, soil erosion and loss of topsoil would be minimized through implementation of the San Joaquin Valley Air Pollution Control District (SJVAPCD) fugitive dust control measures (See Section 3.2 – Air Quality). Once construction is complete, the Project would not result in

[14] Biological Resource Evaluation for the Lemoore Residential Development Project. Prepared by Colibri Ecological Consulting, LLC. December 2020. Appendix B. Page 11.

significant soil erosion or loss of topsoil. Mitigation Measure GEO – 2 (requirement to prepare a SWPPP) will ensure that impacts remain ***less than significant.***

**Mitigation Measures:**

**GEO – 2** Prior to issuing of grading or building permits, the project applicant shall submit to the City: (1) the approved Stormwater Pollution Prevention Plan (SWPPP) and (2) the Notice of Intent (NOI) to comply with the General National Pollutant Discharge Elimination System (NPDES) from the Central Valley Regional Water Quality Control Board. The requirements of the SWPPP and NPDES shall be incorporated into design specifications and construction contracts. Recommended Best Management Practices for the construction phase may include the following:

- Stockpiling and disposing of demolition debris, concrete, and soil properly;
- Protecting existing storm drain inlets and stabilizing disturbed areas;
- Implementing erosion controls;
- Properly managing construction materials;
- Managing waste, aggressively controlling litter, and implementing sediment controls; and
- Evidence of the approved SWPPP shall be submitted to the Lead Agency.

**Impact 3.6-3:** *Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?*

**Less Than Significant Impact.** As previously discussed herein, the proposed Project would not be located within an area identified as a landslide hazard area. The proposed Project is located on relatively flat agricultural fields, and the threat of a landslide occurring on or adjacent to the Project site is considered low. Therefore, potential impacts associated with landslides would be ***less than significant.***

The proposed Project would be located on soils that exhibit low to moderate potential for liquefaction during an earthquake, and the potential for lateral spreading to occur is considered low. The site would be designed in accordance with engineering design standards and structural improvement requirements to withstand the effects of soil settlement and collapsible soils. Engineered compacted fill would likely be used during construction in accordance with building code requirements, which would reduce the potential for lateral spreading of soils from Project

construction. The Geotechnical Feasibility Report will include recommendations for site preparation and fill placement related to the Project site plan.

GEO-1 requires that a design-level geotechnical report provide specific requirements necessary for design of the structures in relation to seismic-related ground failure, including liquefaction,. These design requirements would comply with CUBC and State of California design standards, Chapter 16, which are required by law for all new structures in the City. These design standards and codes were established to reduce the potential impacts to structures from seismic-related ground failure, including liquefaction. Therefore, with foundation and structural design in accordance with the City of Lemoore General Plan and current CUBC standards and implementation of GEO-1, landslide, lateral spreading, subsidence, liquefication or collapse impacts on the proposed Project area would be ***less than significant.***

**Mitigation Measures**

Implementation of GEO-1.

**Impact 3.6-4:** *Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?*

**Less Than Significant Impact.** As previously described, the soils present on the Project site have low to moderate potential for expansion. As discussed under Impact 3.6-1 through Impact 3.6-3 above, the proposed Project would be designed in accordance with all applicable building code requirements and structural improvement requirements, which would also address expansive soil hazards. Engineered compacted fill would likely be used during construction in accordance with building code requirements, which would reduce the potential for impacts from expansive soil on Project development.

The shrink/swell behavior of expansive soils can lead to damage of structures over time if not addressed appropriately prior to construction. However, as described above, GEO-1 requires that a design-level geotechnical report be performed by a qualified geotechnical engineer on the project site to evaluate soil conditions and geologic hazards, and that a California geotechnical engineer provide an evaluation for expansive soils and provide recommendations consistent with CUBC requirements to reduce potential adverse effects from expansive soils. All grading and construction on site would adhere to the specifications, procedures, and site conditions contained in the final design plans, which would be fully compliant with the recommendations provided by the California registered professional engineer in accordance with California and City

Building Code requirements. The required measures would encompass site preparation, such as treatment of expansive soils or replacement with engineered fill. The final designs would be subject to approval and follow-up inspection by the City Building Inspection personnel. Final design requirements would be provided to the on-site construction supervisor and the City Building Inspector to ensure compliance. Therefore, with implementation of GEO- 1 and foundation and structural design in accordance with the City of Lemoore General Plan and current CUBC standards, impacts from expansive soil on the proposed Project would be ***less than significant.***

**Mitigation Measures**

Implementation of GEO-1.

**Impact 3.6-5:** *Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?*

**Less than Significant Impact with Mitigation.** Paleontological resources are valued for the information they yield about the history of the earth and its past ecological settings. There are currently no unique geologic features located in the Project Area. The Lemoore General Plan notes that The University of California Museum of Paleontology lists 751 localities where fossils have been found in Kings County. At least one of these localities is documented to be in the Planning Area and others can be assumed. Therefore, there is the potential to encounter unidentified fossils during construction of new development.

There is a possibility that future ground-disturbing activities could cause damage to, or destruction of, previously undiscovered paleontological resources or unique geologic features. Implementation of Mitigation Measure GEO-3 would reduce potential impacts to a less-than significant level. In addition, the Lemoore General Plan policies and guidelines direct the City to require construction to stop immediately if paleontological resources are uncovered during grading or other onsite excavation activities, until appropriate mitigation is implemented. Therefore, with Mitigation Measure GEO-3, impacts would be ***less than significant***.

**Mitigation Measures**

**GEO – 3** If any paleontological resources are encountered during ground-disturbance activities, all work within 25 feet of the find shall halt until a qualified paleontologist as defined by the Society of Vertebrate Paleontology Standard Procedures for the Assessment and

Mitigation of Adverse Impacts to Paleontological Resources (2010), can evaluate the find and make recommendations regarding treatment. Paleontological resource materials may include resources such as fossils, plant impressions, or animal tracks preserved in rock. The qualified paleontologist shall contact the Natural History Museum of Los Angeles County or other appropriate facility regarding any discoveries of paleontological resources.

If the qualified paleontologist determines that the discovery represents a potentially significant paleontological resource, additional investigations and fossil recovery may be required to mitigate adverse impacts from project implementation. If avoidance is not feasible, the paleontological resources shall be evaluated for their significance. If the resources are not significant, avoidance is not necessary. If the resources are significant, they shall be avoided to ensure no adverse effects, or such effects must be mitigated. Construction in that area shall not resume until the resource appropriate measures are recommended or the materials are determined to be less than significant. If the resource is significant and fossil recovery is the identified form of treatment, then the fossil shall be deposited in an accredited and permanent scientific institution. Copies of all correspondence and reports shall be submitted to the Lead Agency.

**Cumulative Impacts**

**Less Than Cumulatively Considerable.** Development of the Project, with implementation of the regulatory requirements discussed above, would result in less-than-significant impacts related to fault rupture. Although the region is a seismically active area, geologic and soil conditions vary widely within a short distance, making the cumulative context for potential impacts resulting from exposing people and structures to related risks one that is more localized or even site specific. Similar to the project, other projects in the area would be required to adhere to the same California and City Building Codes that would reduce the risk to people and property to less than-significant levels. Although future seismic events cannot be predicted, adherence to all federal, state, and local programs, requirements, and policies pertaining to building safety and construction would limit the potential for loss, injury, or death. Cumulative projects would implement similar mitigation as GEO-1 for the proposed Project, which would require conducting a full geotechnical study to evaluate soil conditions and geologic hazards on the Project site, as well as retaining a California registered and licensed geotechnical engineer to design project facilities. Therefore, with implementation of mitigation measure GEO-1, the proposed project, combined with past, present, and other foreseeable development in the area,

would not result in a cumulatively significant impact by directly or indirectly causing potential substantial adverse effects, including fault rupture, strong seismic ground shaking, or seismic-related ground failure, including liquefaction and landslides.

Surficial deposits, namely erosion and sediment deposition, can be cumulative in nature, depending on the type and amount of development proposed in a given geographical area. The cumulative setting for soil erosion consists of existing, planned, proposed, and reasonably foreseeable land use conditions in the region. However, construction constraints are primarily based on specific sites within a proposed development and on the soil characteristics and topography of each site. The proposed Project will comply with these codes, standards, and requirements and GEO-2. Other cumulative projects would be required to adhere to similar requirements, thereby minimizing cumulative erosion impacts. Specifically, all planned projects in the vicinity of the Project are subject to environmental review and would be required to conform to the City General Plan and Building Code and would implement additional mitigation for seismic hazards to ensure soil stability, especially related to seismically induced erosion. With implementation of GEO-2, the Project would not contribute to any cumulative impacts related to substantial soil erosion or loss of topsoil and cumulative impacts would be less than significant.

As previously discussed, risk of on-site or off-site landslides associated with development of the project are considered negligible. In addition, the potential for liquefaction and other geologic hazards related to liquefaction, including lateral spreading, are also considered low; however, even if there were areas of shallow groundwater, liquefaction hazards are site specific and do not combine to become cumulatively considerable. Furthermore, collapse would likely be negligible in the areas surrounding the project site. However, as with the Project, cumulative projects would adhere to building code requirements and would implement mitigation similar to GEO-1, which would require a design-level geotechnical investigation that provides detailed site-specific data. With implementation of GEO-1, the Project would not contribute to any cumulative impacts related to on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. Cumulative impacts would be less than significant.

Similarly, with regard to expansive soils, the Project would implement GEO-1, which requires that a geotechnical study evaluate soil conditions and geologic hazards, to be performed by a California licensed geotechnical engineer or engineering geologist on the Project site. The geotechnical study would include evaluation of expansive soils and provide recommendations consistent with CUBC requirements to reduce potential adverse effects from expansive soils. Cumulative projects would implement similar measures to address any potential for expansive

soils. With implementation of GEO-1, the Project would not contribute to any cumulative impacts related to expansive soils. Cumulative impacts would be less than significant.

The geographic scope for cumulative effects to paleontological resources includes the southern portion of the San Joaquin Valley. Given similarities in geologic formations, this area is expected to contain similar types of paleontological resources. There is no temporal scope because direct impacts to paleontological resources are permanent. Cumulative impacts to paleontological resources in the study area could occur if other related projects, in conjunction with the proposed project, had or would have impacts on paleontological resources that, when considered together, would be significant. Development of the proposed Project, in combination with other projects in the area, has the potential to contribute to a cumulatively significant paleontological resources impact due to the potential loss of paleontological resources unique to the region. However, mitigation measure GEO-3 reduces potentially significant project impacts to paleontological resources during construction of the proposed Project.

Although Project construction has the potential to disturb paleontological resources, implementation of GEO-3 would ensure that the appropriate protocol is followed with regard to identifying and handling resources. Implementation of these mitigation measures would reduce potential impacts to paleontological resources to a less-than-significant level. With implementation of these mitigation measures, the Project would not result in significant impacts to paleontological resources. Given this minimal impact and the requirement for similar mitigation for other projects in the southern San Joaquin Valley, the proposed Project's incremental effect is not cumulatively considerable when viewed in connection with the effects of other closely related past projects, the effects of other current projects, and the effects of probable future projects; thus, cumulative impacts to paleontological resources would be less than significant.

The proposed project's incremental contribution to cumulative geologic and soil impacts would be ***less than cumulatively considerable***.

# 3.7 Greenhouse Gas Emissions

This section discusses regional greenhouse gas (GHG) emissions and climate change impacts that could result from implementation of the proposed Project. This section provides a background discussion of greenhouse gases and effects of global climate change and is organized with an existing setting, regulatory setting, and impact analysis. The information and analysis presented in this Section are based on the Air Quality and Greenhouse Gas Analysis Reports (AQGGA) prepared for this Project by Mitchell Air Quality Consulting (Appendix B).

## Environmental Setting

Climate Change

Climate change is a change in the average weather of the earth that is measured by alterations in wind patterns, storms, precipitation, and temperature. These changes are assessed using historical records of temperature changes occurring in the past, such as during previous ice ages. Many of the concerns regarding climate change use this data to extrapolate a level of statistical significance, specifically focusing on temperature records from the last 150 years (the Industrial Age) that differ from previous climate changes in rate and magnitude.

The United Nations Intergovernmental Panel on Climate Change (IPCC) constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. In its Fourth Assessment Report, the IPCC predicted that the global mean temperature change from 1990 to 2100, given six scenarios, could range from 1.1 degrees Celsius (°C) to 6.4°C. Regardless of analytical methodology, global average temperatures and sea levels are expected to rise under all scenarios.[1] The report also concluded that "[w]arming of the climate system is unequivocal," and that "[m]ost of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations."

An individual project cannot generate enough GHG emissions to cause a discernible change in global climate. However, the project participates in the potential for global climate change by its

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[1] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 43.

incremental contribution of GHGs and, when combined with the cumulative increase of all other sources of GHGs, constitute potential influences on global climate change.

*Consequences of Climate Change in California*

In California, climate change may result in consequences such as the following[2]:

- **Reduction in the quality and supply of water from the Sierra snowpack.** If heat-trapping emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent. This can lead to challenges in securing adequate water supplies. It can also lead to a potential reduction in hydropower.

- **Increased risk of large wildfires.** If rain increases as temperatures rise, wildfires in the grasslands and chaparral ecosystems of southern California are estimated to increase by approximately 30 percent toward the end of the 21st century because more winter rain will stimulate the growth of more plant "fuel" available to burn in the fall. In contrast, a hotter, drier climate could promote up to 90 percent more northern California fires by the end of the century by drying out and increasing the flammability of forest vegetation.

- **Reductions in the quality and quantity of certain agricultural products.** The crops and products likely to be adversely affected include wine grapes, fruit, nuts, and milk.

- **Exacerbation of air quality problems.** If temperatures rise to the medium warming range, there could be 75 to 85 percent more days with weather conducive to ozone formation in Los Angeles and the San Joaquin Valley, relative to today's conditions. This is more than twice the increase expected if rising temperatures remain in the lower warming range. This increase in air quality problems could result in an increase in asthma and other health-related problems.

- **A rise in sea levels resulting in the displacement of coastal businesses and residences.** During the past century, sea levels along California's coast have risen about seven inches. If emissions continue unabated and temperatures rise into the higher anticipated warming range, sea level is expected to rise an additional 22 to 35 inches by the end of the century. Elevations of this magnitude would inundate coastal areas with salt water, accelerate

[2] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 43.

coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.

- **An increase in temperature and extreme weather events.** Climate change is expected to lead to increases in the frequency, intensity, and duration of extreme heat events and heat waves in California. More heat waves can exacerbate chronic disease or heat-related illness.

- **A decrease in the health and productivity of California's forests.** Climate change can cause an increase in wildfires, an enhanced insect population, and establishment of non-native species.

*Consequences of Climate Change in the Lemoore Area*

Figure 3.7-1 displays a chart of measured historical and projected annual average maximum temperatures in the Project area. As shown in the figure, temperatures are expected to rise in the low and high GHG emissions scenarios. The results indicate that temperatures are predicted to increase by 3.6 degrees Fahrenheit (°F) under the low emission scenario and 6.2 °F under the high emissions scenario.[3]

**Water Supply.** The City of Lemoore Water Department would provide water for the Project. The City relies solely on groundwater for potable water supplies. The availability of water for groundwater recharge and the rate of recharge could decline if climate change were to result in reduced snowpack in the Sierra Nevada.

**Wildfires.** The Project site is within an agricultural area on the edge of the Lemoore urban area with limited fuels that would be subject to a wildfire. Foothill and mountain areas located many miles to the west and east of the Lemoore area subject to wildfire. The potential for increased temperatures and drought conditions due to climate change would result in increased risk from wildfire in those areas.

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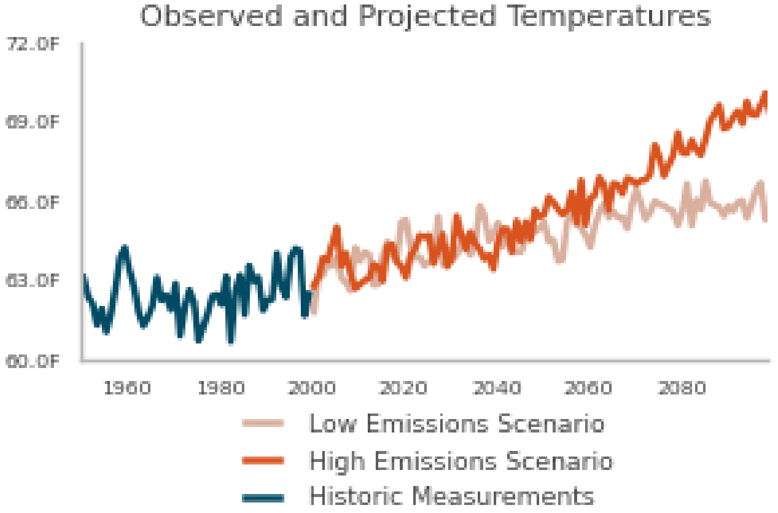
[3] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 44.

**Figure 3.7-1**
**Observed and Projected Temperatures for Climate Change in the Project Area[4]**




Greenhouse Gases (GHGs)

Gases that trap heat in the atmosphere are referred to as GHGs. The effect is analogous to the way a greenhouse retains heat. Common GHGs include water vapor, $CO_2$, methane, $NO_X$, chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, ozone, and aerosols. Natural processes and human activities emit GHGs. The presence of GHGs in the atmosphere affects the earth's temperature. It is believed that emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations.

Climate change is driven by forcings and feedbacks. Radiative forcing is the difference between the incoming energy and outgoing energy in the climate system. Positive forcing tends to warm the surface while negative forcing tends to cool it. Radiative forcing values are typically expressed in watts per square meter. A feedback is a climate process that can strengthen or weaken a forcing. For example, when ice or snow melts, it reveals darker land underneath which absorbs more radiation and causes more warming. The global warming potential is the potential of a gas or aerosol to trap heat in the atmosphere. The global warming potential of a gas is essentially a measurement of the radiative forcing of a GHG compared with the reference gas, $CO_2$.

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[4] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 44.

Individual GHG compounds have varying global warming potential and atmospheric lifetimes. $CO_2$, the reference gas for global warming potential, has a global warming potential of one. The global warming potential of a GHG is a measure of how much a given mass of a GHG is estimated to contribute to global warming. To describe how much global warming a given type and amount of GHG may cause, the carbon dioxide equivalent is used. The calculation of the carbon dioxide equivalent is a consistent methodology for comparing GHG emissions since it normalizes various GHG emissions to a consistent reference gas, $CO_2$. For example, $CH_4$'s warming potential of 25 indicates that $CH_4$ has 25 times greater warming effect than $CO_2$ on a molecule-per-molecule basis. A carbon dioxide equivalent is the mass emissions of an individual GHG multiplied by its global warming potential. GHGs defined by Assembly Bill (AB) 32 include $CO_2$, $CH_4$, $NO_X$, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. They are described in Table 3.7-1. A seventh GHG, nitrogen trifluoride, was added to Health and Safety Code section 38505(g)(7) as a GHG of concern. The global warming potential amounts are from IPCC Fourth Assessment Report (AR4). The AR4 GWP amounts are incorporated into the CalEEMod 2016.3.2 used in this analysis. Although the newer IPCC Fifth Assessment Report (AR5) includes new global warming potential amounts, the California Air Resources Board (ARB) continues to use AR4 rates for inventory purposes, including the 2018 inventory released on October 19, 2020, to ensure consistency with past inventories. Until such time as ARB updates its Scoping Plan inventories to utilize AR5 GWPs, it is appropriate to continue using AR4 GWPs for CEQA analyses, which are based on Scoping Plan consistency.

**Table 3.7-1**
**Description of Greenhouse Gases[5]**

| Greenhouse Gas | Description and Physical Properties | Sources |
|---|---|---|
| Nitrous oxide | Nitrous oxide (laughing gas) is a colorless GHG. It has a lifetime of 114 years. Its global warming potential is 298. | Microbial processes in soil and water, fuel combustion, and industrial processes. |
| Methane | Methane is a flammable gas and is the main component of natural gas. It has a lifetime of 12 years. Its global warming potential is 25. | Methane is extracted from geological deposits (natural gas fields). Other sources are landfills, fermentation of manure, and decay of organic matter. |
| Carbon dioxide | Carbon dioxide ($CO_2$) is an odorless, colorless, natural GHG. Carbon dioxide's global warming potential is 1. The concentration | Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; |

[5] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 47.

| Greenhouse Gas | Description and Physical Properties | Sources |
|---|---|---|
| | in 2005 was 379 parts per million (ppm), which is an increase of about 1.4 ppm per year since 1960. | evaporation from oceans; and volcanic outgassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood. |
| Chlorofluorocarbons | These are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. They are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). Global warming potentials range from 124 to 14,800. | Chlorofluorocarbons were synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone. The Montreal Protocol on Substances that Deplete the Ozone Layer prohibited their production in 1987. |
| Perfluorocarbons | Perfluorocarbons have stable molecular structures and only break down by ultraviolet rays about 60 kilometers above Earth's surface. Because of this, they have long lifetimes, between 10,000 and 50,000 years. Global warming potentials range from 7,390 to 12,200. | Two main sources of perfluorocarbons are primary aluminum production and semiconductor manufacturing. |
| Sulfur hexafluoride | Sulfur hexafluoride ($SF_6$) is an inorganic, odorless, colorless, and nontoxic, nonflammable gas. It has a lifetime of 3,200 years. It has a high global warming potential of 22,800. | This gas is man-made and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas. |
| Nitrogen trifluoride | Nitrogen trifluoride ($NF_3$) was added to Health and Safety Code section 38505(g)(7) as a GHG of concern. It has a high global warming potential of 17,200. | This gas is used in electronics manufacture for semiconductors and liquid crystal displays. |

The State has begun the process of addressing pollutants referred to as short-lived climate pollutants. Senate Bill (SB) 605, approved by the governor on September 14, 2014, required the ARB to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants by January 1, 2016. ARB was required to complete an emission inventory of these pollutants, identify research needs, identify existing and potential new control measures that offer co-benefits, and coordinate with other state agencies and districts to develop control measures. The Short-Lived Climate Pollutant Strategy was approved by the ARB in March

2017. The strategy calls for reductions of 50 percent from black carbon, 40 percent from methane, and 40 percent from HFCs from the 2030 Business as Usual (BAU) inventory for these pollutants.[6]

The short-lived climate pollutants include three main components: black carbon, fluorinated gases, and methane. Fluorinated gases and methane are described in Table 3.7-1 and are already included in the California GHG inventory. Black carbon has not been included in past GHG inventories; however, ARB will include it in its comprehensive strategy.[7]

Ozone is another short-lived climate pollutant that will be part of the strategy. Ozone affects evaporation rates, cloud formation, and precipitation levels. Ozone is not directly emitted, so its precursor emissions—VOC and $NO_X$ on a regional scale and $CH_4$ on a hemispheric scale—will be subject of the strategy.[8]

Black carbon is a component of fine particulate matter. Black carbon is formed by incomplete combustion of fossil fuels, biofuels, and biomass. Sources of black carbon within a jurisdiction may include exhaust from diesel trucks, vehicles, and equipment, as well as smoke from biogenic combustion. Biogenic combustion sources of black carbon include the burning of biofuels used for transportation, the burning of biomass for electricity generation and heating, prescribed burning of agricultural residue, and natural and unnatural wildfires. Black carbon is not a gas but an aerosol—particles or liquid droplets suspended in air. Black carbon only remains in the atmosphere for days to weeks, whereas other GHGs can remain in the atmosphere for years. Black carbon can be deposited on snow, where it absorbs sunlight, reduces sunlight reflectivity, and hastens snowmelt. Direct effects include absorbing incoming and outgoing radiation; indirectly, black carbon can also affect cloud reflectivity, precipitation, and surface dimming (cooling).

Global warming potentials for black carbon were not defined by the IPCC in its Fourth Assessment Report. The ARB has identified a global warming potential of 3,200 using a 20-year time horizon and 900 using a 100-year time horizon from the IPCC Fifth Assessment. Sources of black carbon are already regulated by ARB, and air district criteria pollutant and toxic regulations that control fine particulate emissions from diesel engines and other combustion

[6] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 47.
[7] Ibid. Page 48.
[8] Ibid.

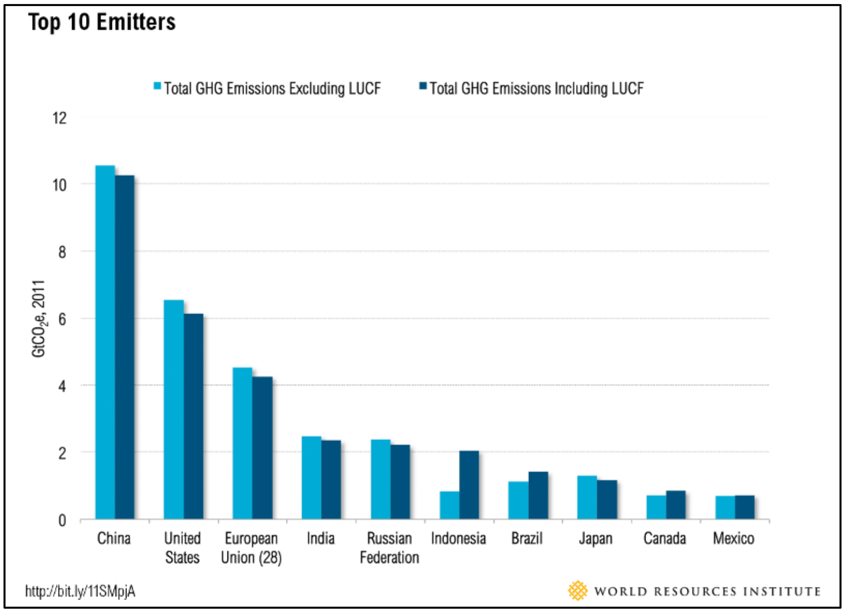
sources. Additional controls on the sources of black carbon specifically for their GHG impacts beyond those required for toxic and fine particulates are not likely to be needed.

Water vapor is also considered a GHG. Water vapor is an important component of our climate system and is not regulated. Increasing water vapor leads to warmer temperatures, which causes more water vapor to be absorbed into the air. Warming and water absorption increase in a spiraling cycle. Water vapor feedback can also amplify the warming effect of other greenhouse gases, such that the warming brought about by increased $CO_2$ allows more water vapor to enter the atmosphere.[9]

*Emissions Inventories*

An emissions inventory is a database that lists, by source, the amount of air pollutants discharged into the atmosphere of a geographic area during a given time period. Emissions worldwide were approximately 43,286 million metric tons of carbon dioxide equivalents ($MMTCO_2e$) in 2012. As shown in Figure 3.7-2, China was the largest GHG emitter with over 10 billion metric tons of $CO_2e$, and the United States was the second largest GHG emitter with over 6 billion metric tons of $CO_2e$.[10]

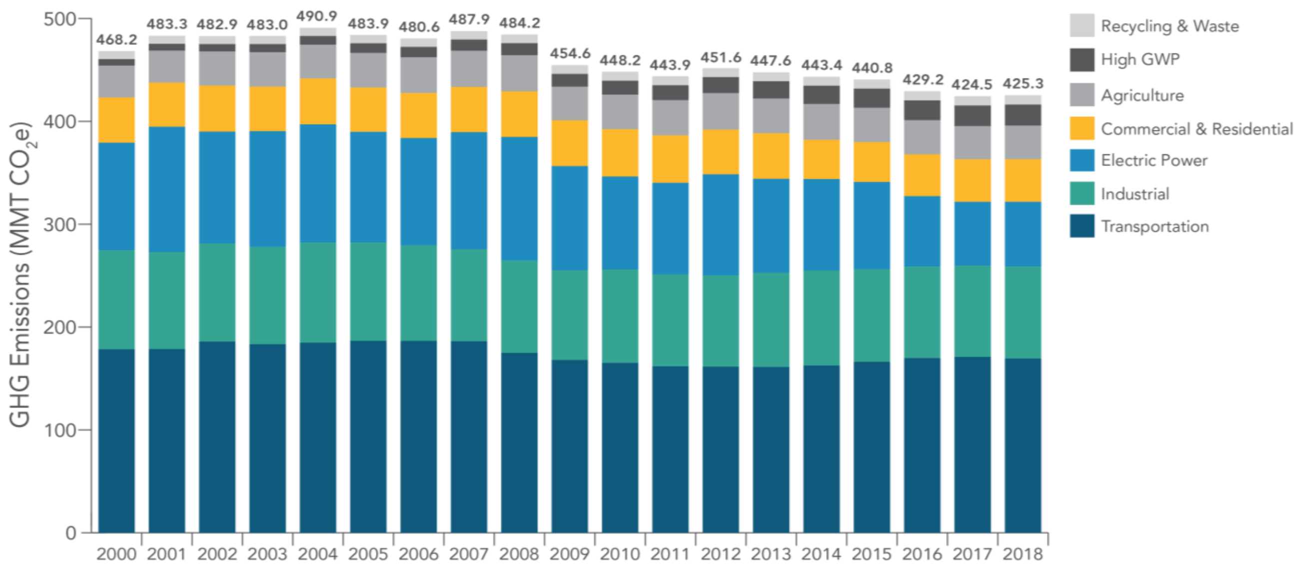
**Figure 3.7-2**
**Greenhouse Gas Emission Trends[11]**




[9] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 42.
[10] Ibid.
[11] Ibid. Page 49.

Figure 3.7-3 shows the contributors of GHG emissions in California between years 2000 and 2018 by Scoping Plan category. The main contributor was transportation. The second-highest sector was industrial, which includes sources from refineries, general fuel use, oil and gas extraction, cement plants, and cogeneration heat output. ARB reported that California's GHG emissions inventory was 425.3 $MMTCO_2e$ in 2018.[12]

**Figure 3.7-3**
**Greenhouse Gas Emission Trends by Scoping Plan Category in California[13]**




*Human Health Effects of GHG Emissions*

GHG emissions from development projects would not result in concentrations that would directly impact public health. However, the cumulative effects of GHG emissions on climate change have the potential to cause adverse effects to human health.

In its report, Global Climate Change Impacts in the U.S. (2009), the U.S. Global Change Research Program has analyzed the degree to which impacts on human health are expected to impact the United States. Potential effects of climate change on public health include:

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[12] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 49.

[13] Ibid.

- Direct Temperature Effects: Climate change may directly affect human health through increases in average temperatures, which are predicted to increase the incidence of heat waves and hot extremes.
- Extreme Events: Climate change may affect the frequency and severity of extreme weather events, such as hurricanes and extreme heat and floods, which can be destructive to human health and well-being.
- Climate-Sensitive Diseases: Climate change may increase the risk of some infectious diseases, particularly those diseases that appear in warm areas and are spread by mosquitoes and other insects, such as malaria, dengue fever, yellow fever, and encephalitis.
- Air Quality: Respiratory disorders may be exacerbated by warming-induced increases in the frequency of smog (ground-level ozone) events and particulate air pollution.[14]

Although there could be health effects resulting from changes in the climate and the consequences that can occur, inhalation of GHGs at levels currently in the atmosphere would not result in adverse health effects, with the exception of ozone and aerosols (particulate matter). The potential health effects of ozone and particulate matter are discussed in criteria pollutant analyses. At very high indoor concentrations (not at levels existing outside), carbon dioxide ($CO_2$), methane, sulfur hexafluoride, and some chlorofluorocarbons can cause suffocation as the gases can displace oxygen.[15]

## Regulatory Setting

In 1988, the United Nations established the Intergovernmental Panel on Climate Change (IPCC) to evaluate the impacts of global warming and to develop strategies that nations could implement to curtail global climate change. In 1992, the United Nations Framework Convention on Climate Change (UNFCCC) established an agreement with the goal of controlling GHG emissions, including $CH_4$. As a result, the Climate Change Action Plan was developed to address the reduction of GHGs in the United States. The plan consists of more than 50 voluntary programs. Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete ozone in the stratosphere (chlorofluorocarbons (CFCs), halons, carbon

tetrachloride, and methyl chloroform) were phased out by 2000 (methyl chloroform was phased out by 2005).

Global warming and climate change have received substantial public attention for more than 20 years. For example, the United States Global Change Research Program was established by the Global Change Research Act of 1990 to enhance the understanding of natural and human-induced changes in the Earth's global environmental system, to monitor, understand and predict global change, and to provide a sound scientific basis for national and international decision making. Even so, analytical tools have not been developed to determine the effect on worldwide global warming from a particular increase in GHG emissions, or the resulting effects on climate change in a particular locale. The scientific tools needed to evaluate the impacts that a specific project may have on the environment are even farther in the future.

To date, no national standards have been established for nationwide GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level. Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects.

Federal Regulations

Prior to the last decade, there were no concrete federal regulations of GHGs or major planning for climate change adaptation. Since then, federal activity has increased. The following are actions regarding the federal government, GHGs, and fuel efficiency.

*Clean Air Act*

The Federal Clean Air Act (FCAA) does not specifically regulate GHG emissions; however, on April 2, 2007 the U.S. Supreme Court in *Massachusetts v. U.S. Environmental Protection Agency*, determined that GHGs are pollutants that can be regulated under the FCAA. The EPA adopted an endangerment finding and cause or contribute finding for GHGs on December 7, 2009. Under the endangerment finding, the Administrator found that the current and projected atmospheric concentrations of the six, key, well-mixed GHGs ($CO_2$, $CH_4$, $N_2O$, HFCs, PFCs, and $SF_6$) threaten the public health and welfare of current and future generations. Under the cause or contribute finding, the Administrator found that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare.

Based on these findings, on April 1, 2010, the EPA finalized the light-duty vehicle rule controlling GHG emissions. This rule confirmed that January 2, 2011, is the earliest date that a 2012 model year vehicle meeting these rule requirements may be sold in the United States. On May 13, 2010, the EPA

issued the final GHG Tailoring Rule. This rule set thresholds for GHG emissions that define when permits under the Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. Implementation of the federal rules is expected to reduce the level of emissions from new motor vehicles and large stationary sources.

*Energy Independence and Security Act of 2007*

The Energy Independence and Security Act of 2007 (December 2007), among other key measures, requires the following, which would aid in the reduction of national GHG emissions:

- Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022;
- Set a target of 35 miles per gallon for the combined fleet of cars and light trucks by model year 2020, and direct the National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks; and
- Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

*Clean Vehicles*

Congress first passed the Corporate Average Fuel Economy law in 1975 to increase the fuel economy of cars and light-duty trucks. The law has become more stringent over time. On May 19, 2009, President Obama put in motion a new national policy to increase fuel economy for all new cars and trucks sold in the United States. On April 1, 2010, the EPA and the Department of Transportation's National Highway Safety Administration announced a joint final rule establishing a national program that would reduce GHG emissions and improve fuel economy for new cars and trucks sold in the United States.

The first phase of the national program applies to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of CO2 per mile, equivalent to 35.5 miles per gallon; that is, if the automobile industry were to meet this CO2 level solely through fuel economy improvements. Together, these standards would cut CO2 emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012–2016). The EPA and the National Highway Safety Administration issued final rules on a second-phase joint rulemaking, establishing national standards for light-duty vehicles for model years 2017 through 2025 in

August 2012 (EPA 2012b). The new standards for model years 2017 through 2025 apply to passenger cars, light-duty trucks, and medium duty passenger vehicles. The final standards are projected to result in an average industry fleetwide level of 163 grams/mile of CO2 in model year 2025, which is equivalent to 54.5 miles per gallon if achieved exclusively through fuel economy improvements.

The EPA and the U.S. Department of Transportation issued final rules for the first national standards to reduce GHG emissions and improve fuel efficiency of heavy-duty trucks and buses on September 15, 2011, which became effective November 14, 2011. For combination tractors, the agencies are proposing engine and vehicle standards that began in the 2014 model year and achieve up to a 20-percent reduction in CO2 emissions and fuel consumption by the 2018 model year. For heavy-duty pickup trucks and vans, the agencies are proposing separate gasoline and diesel truck standards, which phase in starting in the 2014 model year and achieve up to a 10-percent reduction for gasoline vehicles, and a 15-percent reduction for diesel vehicles by 2018 model year (12 and 17 percent respectively if accounting for air conditioning leakage). Lastly, for vocational vehicles, the engine and vehicle standards would achieve up to a 10-percent reduction in fuel consumption and CO2 emissions from the 2014 to 2018 model years.

*Mandatory Reporting of Greenhouse Gases*

The Consolidated Appropriations Act of 2008, passed in December 2007, requires the establishment of mandatory GHG reporting requirements. On September 22, 2009, the EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule, which became effective January 1, 2010. The rule requires reporting of GHG emissions from large sources and suppliers in the United States, and is intended to collect accurate and timely emissions data to inform future policy decisions. Under the rule, suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions are required to submit annual reports to the EPA.

*New Source Review*

The EPA issued a final rule on May 13, 2010 that establishes thresholds for GHGs, which will define when permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. This final rule "tailors" the requirements of these Clean Air Act permitting programs to limit which facilities will be required to obtain Prevention of Significant Deterioration and Title V permits. In the preamble to the revisions to the federal code of regulations, the EPA states:

> This rulemaking is necessary because without it the Prevention of Significant Deterioration and Title V requirements would apply, as of January 2, 2011, at the 100 or 250 tons per year levels provided under the Clean Air Act, greatly increasing the number of required permits, imposing undue costs on small sources, overwhelming the resources of permitting authorities, and severely impairing the functioning of the programs. EPA is relieving these resource burdens by phasing in the applicability of these programs to greenhouse gas sources, starting with the largest greenhouse gas emitters. This rule establishes two initial steps of the phase-in. The rule also commits the agency to take certain actions on future steps addressing smaller sources but excludes certain smaller sources from Prevention of Significant Deterioration and Title V permitting for greenhouse gas emissions until at least April 30, 2016.

The EPA estimates that facilities responsible for nearly 70 percent of the national GHG emissions from stationary sources will be subject to permitting requirements under this rule. This includes the nation's largest GHG emitters—power plants, refineries, and cement production facilities.

*Clean Power Plan and New Source Performance Standards for Electric Generating Units*

On October 23, 2015, the EPA published a final rule (effective December 22, 2015) establishing the carbon pollution emission guidelines for existing stationary sources: electric utility generating units (80 FR 64510–64660), also known as the Clean Power Plan. These guidelines prescribe how states must develop plans to reduce GHG emissions from existing fossil-fuel-fired electric generating units. The guidelines establish $CO_2$ emission performance rates representing the best system of emission reduction for two subcategories of existing fossil-fuel-fired electric generating units: (1) fossil-fuel-fired electric utility steam-generating units and (2) stationary combustion turbines. Concurrently, the EPA published a final rule (effective October 23, 2015) establishing standards of performance for GHG emissions from new, modified, and reconstructed stationary sources: electric utility generating units (80 FR 64661–65120). The rule prescribes $CO_2$ emission standards for newly constructed, modified, and reconstructed affected fossil-fuel-fired electric utility generating units. The U.S. Supreme Court stayed implementation of the Clean Power Plan pending resolution of several lawsuits. Additionally, in March 2017, President Trump directed the EPA Administrator to review the Clean Power Plan in order to determine whether it is consistent with current executive policies concerning GHG emissions, climate change, and energy.

*Presidential Executive Order 13693*

Presidential Executive Order 13693, Planning for Federal Sustainability in the Next Decade, signed in 2015, seeks to maintain federal leadership in sustainability and greenhouse gas

emission reductions. Its goal is to reduce agency Scope 1 and 2 GHG emissions by at least 40 percent by 2025, foster innovation, reduce spending, and strengthen communities through increased efficiency and improved environmental performance. Sustainability goals are set for building efficiency and management, energy portfolio, water use efficiency, fleet efficiency, sustainable acquisition and supply chain greenhouse gas management, pollution prevention, and electronic stewardship.

*Presidential Executive Order 13783*

Presidential Executive Order 13783, Promoting Energy Independence and Economic Growth (March 28, 2017), orders all federal agencies to apply cost-benefit analyses to regulations of GHG emissions and evaluations of the social cost of carbon, nitrous oxide, and methane.

*Cap-and-Trade*

Cap-and-Trade refers to a policy tool where emissions are limited to a certain amount and can be traded or provides flexibility on how the emitter can comply. There is no federal GHG Cap-and-Trade program currently; however, some states have joined to create initiatives to provide a mechanism for Cap-and-Trade.

The Regional Greenhouse Gas Initiative is an effort to reduce GHGs among the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. Each state caps carbon dioxide emissions from power plants, auctions carbon dioxide emission allowances, and invests the proceeds in strategic energy programs that further reduce emissions, save consumers money, create jobs, and build a clean energy economy. The Initiative began in 2008.

The Western Climate Initiative partner jurisdictions have developed a comprehensive initiative to reduce regional GHG emissions to 15 percent below 2005 levels by 2020. The partners are California, British Columbia, Manitoba, Ontario, and Quebec. Currently only California and Quebec are participating in the Cap-and-Trade program.[16]

[16] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 54.

State Regulations

*Legislative Actions to Reduce GHGs*

The State of California legislature has enacted a series of bills that constitute the most aggressive program to reduce GHGs of any state in the nation. Some legislation such as the landmark AB 32 California Global Warming Solutions Act of 2006 was specifically enacted to address GHG emissions. Other legislation such as Title 24 and Title 20 energy standards were originally adopted for other purposes such as energy and water conservation, but also provide GHG reductions. This section describes the major provisions of the legislation.

**AB 32.** The California State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. "Greenhouse gases" as defined under AB 32 include $CO_2$, methane, $NO_X$, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Since AB 32 was enacted, a seventh chemical, nitrogen trifluoride, has also been added to the list of GHGs. The ARB is the state agency charged with monitoring and regulating sources of GHGs. AB 32 states the following:

> Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

The ARB approved the 1990 GHG emissions level of 427 $MMTCO_2e$ on December 6, 2007 (ARB 2007). Therefore, to meet the State's target, emissions generated in California in 2020 are required to be equal to or less than 427 $MMTCO_2e$. Emissions in 2020 in a BAU scenario were estimated to be 596 $MMTCO_2e$, which do not account for reductions from AB 32 regulations. At that rate, a 28 percent reduction was required to achieve the 427 $MMTCO_2e$ 1990 inventory. In October 2010, ARB prepared an updated 2020 forecast to account for the effects of the 2008 recession and slower forecasted growth. The 2020 inventory without the benefits of adopted

regulation is now estimated at 545 $MMTCO_2e$. Therefore, under the updated forecast, a 21.7 percent reduction from BAU is required to achieve 1990 levels.[17]

**Progress in Achieving AB 32 Targets and Remaining Reductions Required**. The State has made steady progress in implementing AB 32 and achieving targets included in Executive Order S-3-05. The progress is evident in updated emission inventories prepared by ARB, which showed that the State inventory dropped below 1990 levels for the first time in 2016.[18] The GHG State inventories for 2017 and 2018 are also remain below the 2020 target. The 2017 Scoping Plan Update includes projections indicating that the State will meet or exceed the 2020 target with adopted regulations.[19]

**ARB Scoping Plan**. The ARB's Climate Change Scoping Plan (Scoping Plan) contains measures designed to reduce the State's emissions to 1990 levels by the year 2020 to comply with AB 32. The Scoping Plan identifies recommended measures for multiple GHG emission sectors and the associated emission reductions needed to achieve the year 2020 emissions target—each sector has a different emission reduction target. Most of the measures target the transportation and electricity sectors. As stated in the Scoping Plan, the key elements of the strategy for achieving the 2020 GHG target include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewables energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation related GHG emissions for regions throughout California and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State's long-term commitment to AB 32 implementation.

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17 Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 55.

18 Ibid.

19 Ibid.

The 2008 Scoping Plan strategy is fully implemented and will continue to be in place along with other new measures contained in the 2017 Scoping Plan to achieve later targets.

The 2008 Scoping Plan differentiates between "capped" and "uncapped" strategies. Capped strategies are subject to the proposed Cap-and-Trade program. The Scoping Plan states that the inclusion of these emissions within the Cap-and-Trade program will help ensure that the year 2020 emission targets are met despite some degree of uncertainty in the emission reduction estimates for any individual measure. Implementation of the capped strategies is calculated to achieve a sufficient amount of reductions by 2020 to achieve the emission target contained in AB 32. Uncapped strategies that will not be subject to the Cap-and-Trade emissions caps and requirements are provided as a margin of safety by accounting for additional GHG emission reductions.[20]

**Cap-and-Trade Program**. The Cap-and-Trade Program is a key element of the Scoping Plan. It sets a statewide limit on sources responsible for 85 percent of California's greenhouse gas emissions and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The program is designed to provide covered entities the flexibility to seek out and implement the lowest cost options to reduce emissions. The program conducted its first auction in November 2012. Compliance obligations began for power plants and large industrial sources in January 2013. Other significant milestones include linkage to Quebec's Cap-and-Trade system in January 2014 and starting the compliance obligation for distributors of transportation fuels, natural gas, and other fuels in January 2015.[21] The latest auction (Joint Auction 25) was conducted in November 2020.[22]

The Cap-and-Trade Program provides a firm cap, ensuring that the 2020 statewide emission limit will not be exceeded. An inherent feature of the Cap-and-Trade Program is that it does not guarantee GHG emissions reductions in any discrete location or by any particular source. Rather, GHG emissions reductions are guaranteed only on an accumulative basis. As summarized by ARB in the First Update:

> The Cap-and-Trade Regulation gives companies the flexibility to trade allowances with others or take steps to cost-effectively reduce emissions at their own facilities. Companies

[20] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 56.

[21] Ibid.

[22] Ibid.

that emit more have to turn in more allowances or other compliance instruments. Companies that can cut their GHG emissions have to turn in fewer allowances. But as the cap declines, aggregate emissions must be reduced. In other words, a covered entity theoretically could increase its GHG emissions every year and still comply with the Cap-and-Trade Program if there is a reduction in GHG emissions from other covered entities. Such a focus on aggregate GHG emissions is considered appropriate because climate

change is a global phenomenon, and the effects of GHG emissions are considered cumulative.[23]

The Cap-and-Trade Program works with other direct regulatory measures and provides an economic incentive to reduce emissions. If California's direct regulatory measures reduce GHG emissions more than expected, then the Cap-and-Trade Program will be responsible for relatively fewer emissions reductions. If California's direct regulatory measures reduce GHG emissions less than expected, then the Cap-and-Trade Program will be responsible for relatively more emissions reductions. Thus, the Cap-and-Trade Program assures that California will meet its 2020 GHG emissions reduction mandate.

The Cap-and-Trade Program establishes an overall limit on GHG emissions from most of the California economy—the "capped sectors." Within the capped sectors, some of the reductions are being accomplished through direct regulations, such as improved building and appliance efficiency standards, the [Low Carbon Fuel Standard] LCFS, and the 33 percent [Renewables Portfolio Standard] RPS. Whatever additional reductions are needed to bring emissions within the cap is accomplished through price incentives posed by emissions allowance prices. Together, direct regulation and price incentives assure that emissions are brought down cost-effectively to the level of the overall cap. The Cap-and-Trade Regulation provides assurance that California's 2020 limit will be met because the regulation sets a firm limit on 85 percent of California's GHG emissions. In sum, the Cap-and-Trade Program will achieve aggregate, rather than site specific or project-level GHG emissions reductions. Also, due to the regulatory architecture adopted by ARB in AB 32, the reductions attributed to the Cap-and-Trade Program can change over time depending on the State's emissions forecasts and the effectiveness of direct regulatory measures.[24]

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[23] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 56.

[24] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 57.

**AB 398.** The Governor signed AB 398 on July 25, 2017 to extend the Cap-and-Trade Program to 2030. The legislation includes provisions to ensure that offsets used by sources are limited to 4 percent of their compliance obligation from 2021 through 2025 and 6 percent from 2026 through 2030. AB 398 also prevents Air Districts from adopting or implementing emission reduction rules from stationary sources that are also subject to the Cap-and-Trade Program.[25]

**SB 32.** The Governor signed SB 32 on September 8, 2016. SB 32 gives ARB the statutory responsibility to include the 2030 target previously contained in Executive Order B-30-15 in the next Scoping Plan update. SB 32 states that "In adopting rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emissions reductions authorized by this division, the state [air resources] board shall ensure that statewide greenhouse gas emissions are reduced to at least 40 percent below the statewide greenhouse gas emissions limit no later than December 31, 2030." The 2017 Climate Change Scoping Plan Update addressing the SB 32 targets was adopted on December 14, 2017. The major elements of the framework proposed to achieve the 2030 target are as follows:

1. SB 350
   - Achieve 50 percent Renewables Portfolio Standard (RPS) by 2030.
   - Doubling of energy efficiency savings by 2030.
2. Low Carbon Fuel Standard (LCFS)
   - Increased stringency (reducing carbon intensity 18 percent by 2030, up from 10 percent in 2020).
3. Mobile Source Strategy (Cleaner Technology and Fuels Scenario)
   - Maintaining existing GHG standards for light- and heavy-duty vehicles.
   - Put 4.2 million zero-emission vehicles (ZEVs) on the roads.
   - Increase ZEV buses, delivery and other trucks.
4. Sustainable Freight Action Plan
   - Improve freight system efficiency.
   - Maximize use of near-zero emission vehicles and equipment powered by renewable energy.

[25] Ibid.

- Deploy over 100,000 zero-emission trucks and equipment by 2030.

5. Short-Lived Climate Pollutant (SLCP) Reduction Strategy

- Reduce emissions of methane and hydrofluorocarbons 40 percent below 2013 levels by 2030.
- Reduce emissions of black carbon 50 percent below 2013 levels by 2030.

6. SB 375 Sustainable Communities Strategies

- Increased stringency of 2035 targets.

7. Post-2020 Cap-and-Trade Program

- Declining caps, continued linkage with Québec, and linkage to Ontario, Canada.
- ARB will look for opportunities to strengthen the program to support more air quality co-benefits, including specific program design elements. In Fall 2016, ARB staff described potential future amendments including reducing the offset usage limit, redesigning the allocation strategy to reduce free allocation to support increased technology and energy investment at covered entities and reducing allocation if the covered entity increases criteria or toxics emissions over some baseline.

8. 20 percent reduction in greenhouse gas emissions from the refinery sector.

9. By 2018, develop Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

**SB 375—The Sustainable Communities and Climate Protection Act of 2008.** SB 375 was signed into law on September 30, 2008. According to SB 375, the transportation sector is the largest contributor of GHG emissions, which emits over 40 percent of the total GHG emissions in California. SB 375 states, "Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32." SB 375 does the following: (1) requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for the implementation of the strategies.

Concerning CEQA, SB 375—as codified in Public Resources Code Section 21159.28—states that CEQA findings determinations for certain projects are not required to reference, describe, or

discuss (1) growth-inducing impacts or (2) any project-specific or cumulative impacts from cars and light-duty truck trips generated by the project on global warming or the regional transportation network if the project:

1. Is in an area with an approved Sustainable Communities Strategy or an alternative planning strategy that the ARB accepts as achieving the greenhouse gas emission reduction targets;
2. Is consistent with that strategy (in designation, density, building intensity, and applicable policies); and
3. Incorporates the mitigation measures required by an applicable prior environmental document.

The ARB has prepared the Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets. The update includes an increase in the 2035 target for Kings County from 10 percent to 13 percent (ARB 2017c). However, the 2018 Kings County RTP/SCS maintains targets of 5 percent by 2020 and 10 percent by 2035. The targets will be revisited in the 2022 RTP/SCS.[26]

**AB 1493 Pavley Regulations and Fuel Efficiency Standards.** California AB 1493, enacted on July 22, 2002, required the ARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light-duty trucks. Implementation of the regulation was delayed by lawsuits filed by automakers and by the EPA's denial of an implementation waiver. The EPA subsequently granted the requested waiver in 2009, which was upheld by the by the U.S. District Court for the District of Columbia in 2011.

The standards are to be phased in during the 2009 through 2016 model years. When fully phased in, the near-term (2009–2012) standards will result in an approximately 22 percent reduction compared with the 2002 fleet, and the mid-term (2013–2016) standards will result in about a 30 percent reduction. Several technologies stand out as providing significant reductions in emissions at favorable costs. These include discrete variable valve lift or camless valve actuation to optimize valve operation, rather than relying on fixed valve timing and lift as has historically been done; turbocharging to boost power and allow for engine downsizing; improved multi-speed transmissions; and improved air conditioning systems that operate optimally, leak less, and/or use an alternative refrigerant.[27]

[26] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 59.
[27] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 59.

The second phase of the implementation for the Pavley bill was incorporated into Amendments to the Low-Emission Vehicle Program referred to as LEV III or the Advanced Clean Cars program. The Advanced Clean Car program combines the control of smog-causing pollutants and GHG emissions into a single coordinated package of requirements for model years 2017 through 2025. The regulation will reduce GHGs from new cars by 34 percent from 2016 levels by 2025. The new rules will reduce pollutants from gasoline and diesel-powered cars, and deliver increasing numbers of zero-emission technologies, such as full battery electric cars, newly emerging plug-in hybrid electric vehicles, and hydrogen fuel cell cars. The regulations will also ensure adequate fueling infrastructure is available for the increasing numbers of hydrogen fuel cell vehicles planned for deployment in California.[28]

**SB 1368—Emission Performance Standards.** In 2006, the State Legislature adopted SB 1368, which was subsequently signed into law by the governor. SB 1368 directs the California Public Utilities Commission to adopt a performance standard for GHG emissions for the future power purchases of California utilities. SB 1368 seeks to limit carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than 5 years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant. Because of the carbon content of its fuel source, a coal-fired plant cannot meet this standard because such plants emit roughly twice as much carbon as natural gas, combined cycle plants. Accordingly, the new law effectively prevents California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the State. The California Public Utilities Commission adopted the regulations required by SB 1368 on August 29, 2007. The regulations implementing SB 1368 establish a standard for baseload generation owned by, or under long-term contract to publicly owned utilities, of 1,100 lbs $CO_2$ per megawatt-hour (MWh).

**SB 1078 and SBX1-2—Renewable Electricity Standards.** On September 12, 2002, Governor Gray Davis signed SB 1078, requiring California to generate 20 percent of its electricity from renewable energy by 2017. SB 107 changed the due date to 2010 instead of 2017. On November 17, 2008, Governor Arnold Schwarzenegger signed Executive Order S-14-08, which established a Renewable Portfolio Standard target for California requiring that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. Governor Schwarzenegger also directed the ARB (Executive Order S-21-09) to adopt a regulation by July 31, 2010, requiring the State's load serving entities to meet a 33 percent renewable energy target by 2020. The ARB

[28] Ibid.

approved the Renewable Electricity Standard on September 23, 2010 by Resolution 10-23. In 2011, the state legislature adopted this higher standard in SB X1-2. Renewable sources of electricity subject to the legislation include wind, small hydropower, solar, geothermal, biomass, and biogas.

**SB 350—Clean Energy and Pollution Reduction Act of 2015.** Signed into law on October 7, 2015, SB350 reaffirms California's commitment to reducing its GHG emissions and addressing climate change. Key provisions include: an increase in the renewables portfolio standard (RPS), higher energy efficiency requirements for buildings, initial strategies towards a regional electricity grid, and improved infrastructure for electric vehicle charging stations. Provisions for a 50 percent reduction in the use of petroleum statewide were removed from the Bill because of opposition and concern that it would prevent the Bill's passage. Specifically, SB 350 requires the following to reduce statewide GHG emissions:

- Increase the amount of electricity procured from renewable energy sources from 33 percent to 50 percent by 2030, with interim targets of 40 percent by 2024, and 25 percent by 2027.
- Double the energy efficiency in existing buildings by 2030. This target will be achieved through the California Public Utility Commission (CPUC), the California Energy Commission (CEC), and local publicly owned utilities.
- Reorganize the Independent System Operator (ISO) to develop more regional electricity transmission markets and improve accessibility in these markets, which will facilitate the growth of renewable energy markets in the western United States.[29]

**SBX 7-7—The Water Conservation Act of 2009**. The legislation directs urban retail water suppliers to set individual 2020 per capita water use targets and begin implementing conservation measures to achieve those goals. Meeting this statewide goal of 20 percent decrease in demand will result in a reduction of almost 2 million acre-feet in urban water use in 2020.

**SB 100 California Renewable Portfolio Standard (2018).** The goal of the program is to achieve the 50 percent renewable resources target by December 31, 2026, and to achieve a 60 percent target by December 31, 2030. The bill approved by Governor Brown on September 10, 2018 would require that retail sellers and local publicly owned electric utilities procure a minimum

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[29] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 60.

quantity of electricity products from eligible renewable energy resources so that the total kilowatt-hours of those products sold to their retail end-use customers achieve 44 percent of retail sales by December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030.[30]

*Executive Orders Related to GHG Emissions*

California's Executive Branch has taken several actions to reduce GHGs through the use of executive orders. Although not regulatory, they set the tone for the State and guide the actions of state agencies.

**Executive Order S-3-05.** On June 1, 2005, former California Governor Arnold Schwarzenegger announced through Executive Order S-3-05, the following reduction targets for GHG emissions:

- By 2010, reduce greenhouse gas emissions to 2000 levels.
- By 2020, reduce greenhouse gas emissions to 1990 levels.
- By 2050, reduce greenhouse gas emissions to 80 percent below 1990 levels.

The 2050 reduction goal represents what some scientists believe is necessary to reach levels that will stabilize the climate. The 2020 goal was established to be a mid-term target. Because this is an executive order, the goals are not legally enforceable for local governments or the private sector.

**Executive Order S-01-07—Low Carbon Fuel Standard.** The governor signed Executive Order S 01-07 on January 18, 2007. The order mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. In particular, the executive order established a Low Carbon Fuel Standard (LCFS) and directed the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission, the ARB, the University of California, and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity" of transportation fuels. This analysis supporting development of the protocols was included in the State Implementation Plan for alternative fuels (State Alternative Fuels Plan adopted by California Energy Commission on

[30] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 61.

December 24, 2007) and was submitted to ARB for consideration as an "early action" item under AB 32. The ARB adopted the Low Carbon Fuel Standard on April 23, 2009.

The Low Carbon Fuel Standard was subject to legal challenge in 2011. Ultimately, ARB was required to bring a new LCFS regulation to the Board for consideration in February 2015. The proposed LCFS regulation was required to contain revisions to the 2010 LCFS as well as new provisions designed to foster investments in the production of the low-carbon fuels, offer additional flexibility to regulated parties, update critical technical information, simplify and streamline program operations, and enhance enforcement. The Office of Administrative Law (OAL) approved the regulation on November 16, 2015.[31] The regulation was last amended in 2018.

**Executive Order S-13-08.** Executive Order S-13-08 states that "climate change in California during the next century is expected to shift precipitation patterns, accelerate sea level rise and increase temperatures, thereby posing a serious threat to California's economy, to the health and welfare of its population and to its natural resources." Pursuant to the requirements in the order, the 2009 California Climate Adaptation Strategy (California Natural Resources Agency 2009) was adopted, which is the "…first statewide, multi-sector, region-specific, and information-based climate change adaptation strategy in the United States." Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

**Executive Order B-30-15**. On April 29, 2015, Governor Edmund G. Brown Jr. issued an executive order to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor's executive order aligns California's GHG reduction targets with those of leading international governments ahead of the United Nations Climate Change Conference in Paris late 2015. The executive order sets a new interim statewide GHG emission reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030 in order to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050, and directs the ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of MMTCO2e. The executive order also requires the State's climate adaptation plan to be updated every three years and for the State to continue its climate change research program, among other provisions. As with Executive Order S-3-05, this executive order is not legally enforceable against local governments and the private sector. Legislation that would update

[31] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 62.

AB 32 to provide post-2020 targets was signed by the Governor in 2016. SB 32 includes a 2030 mandate matching the requirements of the Executive Order.

**Executive Orders B-55-18 Carbon Neutrality by 2045 (2018).** This Executive Order signed on September 10, 2018 sets a new statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. The executive order directs ARB to work with relevant state agencies to develop a framework for implementation and accounting that tracks progress toward this goal.[32]

*California Regulations and Building Codes*

California has a long history of adopting regulations to improve energy efficiency in new and remodeled buildings. These regulations have kept California's energy consumption relatively flat even with rapid population growth.

**Title 20 Appliance Efficiency Regulations.** California Code of Regulations, Title 20: Division 2, Chapter 4, Article 4, Sections 1601–1608: Appliance Efficiency Regulations regulates the sale of appliances in California. The Appliance Efficiency Regulations include standards for both federally regulated appliances and non-federally regulated appliances. Twenty-three categories of appliances are included in the scope of these regulations. The standards within these regulations apply to appliances that are sold or offered for sale in California, except those sold wholesale in California for final retail sale outside the State and those designed and sold exclusively for use in recreational vehicles or other mobile equipment.[33]

**Title 24 Energy Efficiency Standards.** California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings, was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The most current 2016 Building Energy Efficiency Standards approved on January 19, 2016 went into effect on January 1, 2017.[34] The CEC adopted the 2019

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[32] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 62.

[33] Ibid.

[34] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 63.

Building Energy Efficiency Standards on May 9, 2018. The updated standards are effective as of January 1, 2020.[35]

**Title 24 California Green Building Standards Code** (California Code of Regulations Title 24, Part 11 code) is a comprehensive and uniform regulatory code for all residential, commercial, and school buildings that went in effect January 1, 2011. The code is updated on a regular basis, with the most recent update consisting of the 2016 California Green Building Code Standards that became effective January 1, 2017. Local jurisdictions are permitted to adopt more stringent requirements, as state law provides methods for local enhancements. The Code recognizes that many jurisdictions have developed existing construction and demolition ordinances, and defers to them as the ruling guidance provided the ordinances include a minimum 50-percent diversion requirement. The code also provides exemptions for areas not served by construction and demolition recycling infrastructure. State building code provides the minimum standard that buildings need to meet in order to be certified for occupancy, which is generally enforced by the local building official.

The California Green Building Standards Code (California Code of Regulations Title 24, Part 11 code) requires:

- **Short-term bicycle parking**. If a commercial project is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for five percent of visitor motorized vehicle parking capacity, with a minimum of one two-bike capacity rack (5.106.4.1.1).
- **Long-term bicycle parking**. For buildings with over 10 tenant-occupants, provide secure bicycle parking for five percent of tenant-occupied motorized vehicle parking capacity, with a minimum of one space (5.106.4.1.2).
- **Designated parking**. Provide designated parking in commercial projects for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table 5.106.5.2 (5.106.5.2).
- **Recycling by Occupants**. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage, and collection of nonhazardous materials for recycling. (5.410.1).
- **Construction waste**. A minimum 50-percent diversion of construction and demolition waste from landfills, increasing voluntarily to 65 and 80 percent for new homes and 80-percent for commercial projects. (5.408.1, A5.408.3.1 [nonresidential], A5.408.3.1

[35] Ibid.

[residential]). All (100 percent) of trees, stumps, rocks and associated vegetation and soils resulting from land clearing shall be reused or recycled (5.408.3).

- **Wastewater reduction**. Each building shall reduce the generation of wastewater by one of the following methods:
  - The installation of water-conserving fixtures or
  - Using non-potable water systems (5.303.4).
- **Water use savings**. Twenty percent mandatory reduction in indoor water use with voluntary goal standards for 30, 35, and 40 percent reductions (5.303.2, A5303.2.3 [nonresidential]).
- **Water meters**. Separate water meters for buildings in excess of 50,000 square feet or buildings projected to consume more than 1,000 gallons per day (5.303.1).
- **Irrigation efficiency**. Moisture-sensing irrigation systems for larger landscaped areas (5.304.3).
- **Materials pollution control**. Low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring, and particleboard (5.404).
- **Building commissioning**. Mandatory inspections of energy systems (i.e., heat furnace, air conditioner, mechanical equipment) for nonresidential buildings over 10,000 square feet to ensure that all are working at their maximum capacity according to their design efficiencies (5.410.2).

**Model Water Efficient Landscape Ordinance**. The Model Water Efficient Landscape Ordinance (Ordinance) was required by AB 1881 Water Conservation Act. The bill required local agencies to adopt a local landscape ordinance at least as effective in conserving water as the Model Ordinance by January 1, 2010. Reductions in water use of 20 percent consistent with (SBX-7-7) 2020 mandate are expected for the ordinance. Governor Brown's Drought Executive Order of April 1, 2015 (EO B-29-15) directed DWR to update the ordinance through expedited regulation. The California Water Commission approved the revised ordinance on July 15, 2015, which became effective on December 15, 2015. New development projects that include landscaped areas of 500 square feet or more are subject to the ordinance. The update requires:

- More efficient irrigation systems
- Incentives for graywater usage
- Improvements in on-site stormwater capture
- Limiting the portion of landscapes that can be planted with high water use plants
- Reporting requirements for local agencies.

**SB 97 and the CEQA Guidelines Update.** Passed in August 2007, SB 97 added Section 21083.05 to the Public Resources Code. The code states: "(a) On or before July 1, 2009, the Office of Planning and Research shall prepare, develop, and transmit to the Resources Agency guidelines for the mitigation of GHG emissions or the effects of GHG emissions as required by this division, including, but not limited to, effects associated with transportation or energy consumption. (b) On or before January 1, 2010, the Resources Agency shall certify and adopt guidelines prepared and developed by the Office of Planning and Research pursuant to subdivision (a)."

Section 21097 was also added to the Public Resources Code. This provided an exemption until January 1, 2010 for transportation projects funded by the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006, or projects funded by the Disaster Preparedness and Flood Prevention Bond Act of 2006—in stating that the failure to analyze adequately the effects of GHGs would not violate CEQA. The Natural Resources Agency completed the approval process, and the Amendments became effective on March 18, 2010. The Natural Resources Agency adopted additional amendments related to greenhouse gases in the 2019 CEQA Guidelines Update adopted on December 28, 2018.

The 2010 CEQA Amendments along with the 2018 CEQA Amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in CEQA documents. The CEQA Amendments fit within the existing CEQA framework by amending existing CEQA Guidelines to reference climate change.

Section 15064.4(b) of the CEQA Guidelines provides direction for lead agencies for assessing the significance of impacts of GHG emissions:

- The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;

- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; or

- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a

> particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project. In determining the significance of impacts, the lead agency may consider a project's consistency with the State's long-term climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is not cumulatively considerable.

Section 15064.4(c) states that a lead agency may use a model or methodology to estimate greenhouse gas emissions resulting from a project. The lead agency has discretion to select the model or methodology it considers most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change. The lead agency must support its selection of a model or methodology with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use.

The 2018 CEQA Guidelines include the following discussion regarding thresholds of significance:

> (d) Using environmental standards as thresholds of significance promotes consistency in significance determinations and integrates environmental review with other environmental program planning and regulation. Any public agency may adopt or use an environmental standard as a threshold of significance. In adopting or using an environmental standard as a threshold of significance, a public agency shall explain how the particular requirements of that environmental standard reduce project impacts, including cumulative impacts, to a level that is less than significant, and why the environmental standard is relevant to the analysis of the project under consideration. For the purposes of this subdivision, an "environmental standard" is a rule of general application that is adopted by a public agency through a public review process and that is all of the following:
>
> (1) a quantitative, qualitative or performance requirement found in an ordinance, resolution, rule, regulation, order, plan or other environmental requirement;
>
> (2) adopted for the purpose of environmental protection;

(3) addresses the environmental effect caused by the project; and,

(4) applies to the project under review.

In addition, the 2018 amendments revised Appendix G Checklist questions to include a new question specifically on energy conservation.

CEQA emphasizes that the effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impacts analysis (see CEQA Guidelines Section 15130(f)).

*California Supreme Court GHG Ruling*

In a November 30, 2015 ruling, the *California Supreme Court in Center for Biological Diversity (CBD) v. California Department of Fish and Wildlife (CDFW)* on the Newhall Ranch project, concluded that whether the project was consistent with meeting statewide emission reduction goals is a legally permissible criterion of significance, but the significance finding for the project was not supported by a reasoned explanation based on substantial evidence. The Court offered potential solutions on pages 25 to 27 of the ruling to address this issue summarized below.

Specifically, the Court advised that:

- **Substantiation of Project Reductions from BAU**. A lead agency may use a BAU comparison based on the Scoping Plan's methodology if it also substantiates the reduction a particular project must achieve to comply with statewide goals. The Court suggested a lead agency could examine the "data behind the Scoping Plan's business-as-usual model" to determine the necessary project-level reductions from new land use development at the proposed location.

- **Compliance with Regulatory Programs or Performance Based Standards**. "A lead agency might assess consistency with A.B. 32's goal in whole or part by looking to compliance with regulatory programs designed to reduce greenhouse gas emissions from particular activities. (See Final Statement of Reasons, supra, at p. 64 [greenhouse gas emissions 'may be best analyzed and mitigated at a programmatic level.'].) To the extent a project's design features comply with or exceed the regulations outlined in the Scoping Plan and adopted by the Air Resources Board or other state agencies, a lead agency could appropriately rely on their use as showing compliance with 'performance-based standards' adopted to fulfill 'a statewide . . . plan for the reduction

or mitigation of greenhouse gas emissions.' (CEQA Guidelines § 15064.4(a)(2), (b)(3); see also id., § 15064(h)(3) [determination that impact is not cumulatively considerable may rest on compliance with previously adopted plans or regulations, including 'plans or regulations for the reduction of greenhouse gas emissions'].)".

- **Compliance with GHG Reduction Plans or Climate Action Plans (CAPs)**. A lead agency may utilize "geographically specific GHG emission reduction plans" such as climate action plans or greenhouse gas emission reduction plans to provide a basis for the tiering or streamlining of project-level CEQA analysis.

- **Compliance with Local Air District Thresholds**. A lead agency may rely on "existing numerical thresholds of significance for greenhouse gas emissions" adopted by, for example, local air districts.

Therefore, consistent with CEQA Guidelines Appendix G, the three factors identified in CEQA Guidelines Section 15064.4 and the recently issued Newhall Ranch opinion, the GHG impacts would be considered significant if the Project would:

- Conflict with a compliant GHG Reduction Plan if adopted by the lead agency;
- Exceed the SJVAPCD GHG Reduction Threshold; or
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emission of GHGs.

<u>San Joaquin Valley Air Pollution Control District Regulations</u>

*Climate Change Action Plan*

On August 21, 2008, the SJVAPCD Governing Board approved a proposal called the Climate Change Action Plan (CCAP). The CCAP began with a public process bringing together stakeholders, land use agencies, environmental groups, and business groups to conduct public workshops to develop comprehensive policies for CEQA guidelines, a carbon exchange bank, and voluntary GHG emissions mitigation agreements for the Board's consideration. The CCAP contains the following goals and actions:

- Develop GHG significance thresholds to address CEQA projects with GHG emission increases.
- Develop the San Joaquin Valley Carbon Exchange for banking and trading GHG reductions.

- Authorize use of the SJVAPCD's existing inventory reporting system to allow use for GHG reporting required by AB 32 regulations.
- Develop and administer GHG reduction agreements to mitigate proposed emission increases from new projects.
- Support climate protection measures that reduce greenhouse gas emissions as well as toxic and criteria pollutants. Oppose measures that result in a significant increase in toxic or criteria pollutant emissions in already impacted areas.

On December 17, 2009, the SJVAPCD Governing Board adopted "Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA," and the policy "District Policy—Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency." The SJVAPCD concluded that the existing science is inadequate to support quantification of the impacts that project specific GHG emissions have on global climatic change. The SJVAPCD found the effects of project-specific emissions to be cumulative, and without mitigation, their incremental contribution to global climatic change could be considered cumulatively considerable. The SJVAPCD found that this cumulative impact is best addressed by requiring all projects to reduce their GHG emissions, whether through project design elements or mitigation.[36]

The SJVAPCD's approach is intended to streamline the process of determining if projectspecific GHG emissions would have a significant effect. Projects exempt from the requirements of CEQA, and projects complying with an approved plan or mitigation program would be determined to have a less than significant cumulative impact. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources and must have a certified final CEQA document.

For non-exempt projects, those projects for which there is no applicable approved plan or program, or those projects not complying with an approved plan or program, the lead agency must evaluate the project against performance-based standards and would require the adoption of design elements, known as Best Performance Standards (BPS), to reduce GHG emissions. The BPS have not yet fully been established, though they must be designed to achieve a 29 percent reduction when compared with the BAU projections identified in ARB's AB 32 Scoping Plan.

[36] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 67.

BAU represents the emissions that would occur in 2020 if the average baseline emissions during the 2002–2004 period were grown to 2020 levels, without control. Thus, these standards would carry with them pre-quantified emissions reductions, eliminating the need for project-specific quantification. Therefore, projects incorporating BPS would not require specific quantification of GHG emissions, and automatically would be determined to have a less than significant cumulative impact for GHG emissions.

For development projects, BPS means, “Any combination of identified GHG emission reduction measures, including project design elements and land use decisions that reduce project-specific GHG emission reductions by at least 29 percent compared with business as usual.”

Projects not incorporating BPS would require quantification of GHG emissions and demonstration that BAU GHG emissions have been reduced or mitigated by 29 percent. As stated earlier, ARB’s adjusted inventory reduced the amount required by the State to achieve 1990 emission levels from 29 percent to 21.7 percent to account for slower growth experienced since the 2008 recession. According to SJVAPCD guidance, quantification of GHG emissions would be required for all projects for which the lead agency has determined that an environmental impact report is required, regardless of whether the project incorporates BPS. The SJVAPCD has not yet adopted BPS for development projects, so quantification of project emissions is required. No update to address SB 32 2030 targets has been accomplished.[37]

*San Joaquin Valley Carbon Exchange*

The SJVAPCD initiated work on the San Joaquin Valley Carbon Exchange in November 2008. The purpose of the carbon exchange is to quantify, verify, and track voluntary GHG emissions reductions generated within the San Joaquin Valley. However, the SJVAPCD has pursued an alternative strategy that incorporates the GHG emissions into its existing Rule 2301—Emission Reduction Credit Offset Banking that formerly only addressed criteria pollutants. The SJVAPCD is also participating with the California Air Pollution Control Officers Association (CAPCOA), of which it is a member, in the CAPCOA Greenhouse Gas Reduction Exchange (GHG Rx). The GHG Rx is operated cooperatively by air districts that have elected to participate. Participating districts have signed a Memorandum of Understanding (MOU) with CAPCOA and agree to post only those credits that meet the Rx standards for quality. The objective is to provide a secure, low-cost, high-quality greenhouse gas exchange for credits created in California. The GHG Rx is intended to help fulfill compliance obligations or

[37] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 67.

mitigation needs of local projects subject to environmental review, reducing the uncertainty of using credits generated in distant locations. The SJVAPCD currently has no credits posted to the GHG Rx as of this writing.[38]

*Rule 2301*

While the Climate Change Action Plan indicated that the GHG emission reduction program would be called the San Joaquin Valley Carbon Exchange, the District incorporated a method to register voluntary GHG emission reductions into its existing Rule 2301—Emission Reduction Credit Banking through amendments of the rule. Amendments to the rule were adopted on January 19, 2012. The purposes of the amendments to the rule include the following:

- Provide an administrative mechanism for sources to bank voluntary GHG emission reductions for later use.
- Provide an administrative mechanism for sources to transfer banked GHG emission reductions to others for any use.
- Define eligibility standards, quantitative procedures, and administrative practices to ensure that banked GHG emission reductions are real, permanent, quantifiable, surplus, and enforceable.

<u>Kings County Association of Governments</u>

*Regional Transportation Plan*

KCAG adopted the 2018 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS) on August 22, 2018. The RTP/SCS is a planning document prepared in cooperation with the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), the California Department of Transportation (Caltrans), and other stakeholders, including transportation system users. The SCS portion of the plan is intended to show how integrated land use and transportation planning can lead to lower greenhouse gas (GHG) emissions from autos and light trucks. SB 375 includes the following four primary findings related to the RTP/SCS development process:

- SB 375 required the ARB to develop regional GHG emission reduction targets for cars and light trucks for each of the 18 MPOs in California, including KCAG. ARB approved targets for the San Joaquin Valley in January 2013. The target for Kings County is a per capita

[38] Ibid., page 68.

reduction in GHG emissions from passenger vehicle travel of five percent by 2020 and 10 percent by 2035 relative to 2005 levels. The 2018 RTP indicates that the County continues to pursue the 5 percent reduction by 2020 and 10 percent reduction by 2035 (KCAG 2018).

- SB 375 required the preparation of an SCS. KCAG included a SCS that specifies how the GHG emission reduction target set by ARB will be achieved in the RTP. If the target cannot be met through the SCS, then an Alternative Planning Strategy (APS) shall be prepared by KCAG. Chapter 12 of the 2018 RTP/SCS includes the SCS for Kings County.
- SB 375 streamlines CEQA requirements for specific residential and mixed-use developments that are consistent with the KCAG SCS or APS (as determined by ARB) to achieve regional GHG emissions reduction target.

The ARB adopted new targets on March 22, 2018 that will take effect for the 2022 RTP/SCS cycle. For KCAG, the new targets will be 5% for 2020 and 13% for 2035.[39]

Local

City of Lemoore 2030 General Plan GHG Related Policies

The General Plan Conservation and Open Space chapter includes several policies related to GHG emissions. The policies direct the City to prepare a GHG emission inventory and a GHG emission reduction plan. The City has not yet prepared the inventory and plan.

- COS-I-38 Compile and update an inventory of greenhouse gas emissions from City operations and track related solid waste, energy, economic, and environmental data.

- COS-I-39 Support State efforts to reduce greenhouse gases and emissions through local action that will reduce motor vehicle use, support alternative forms of transportation, require energy conservation in new construction, and energy management in public buildings.
  *By proposing compact development, mixed use centers, walkable neighborhoods, green building technology, and jobs-housing balance, the City will be helping to implement many of the strategies and programs in the San Joaquin Valley 2007 Ozone Plan.*

[39] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 70.

- COS-I-40 Prepare a Greenhouse Gas Emissions Reduction Plan, focusing on feasible actions the City can take to minimize the adverse impacts of Plan implementation on climate change and air quality. The Plan will include but will not be limited to:

  - An inventory of all known, or reasonably discoverable, sources of greenhouse gases (GHGs) that currently exist in the City and sources that existed in 1990. In determining what is a source of GHG emissions, the City may rely on the definition of "greenhouse gas emissions source" or "source" as defined in Section 38505 of the California Global Warming Solutions Act ("AB 32") or its governing regulations. The inventory may include estimates of emissions drawing on available information from to state and regional air quality boards, supplemented by information obtained by the City.

  - A projected inventory of the new GHGs that can reasonably be expected to be emitted in the year 2030 due to the City's discretionary land use decisions pursuant to the 2030 General Plan Update, as well as new GHGs emitted by the City's internal government operations. The projected inventories will include estimates, supported by substantial evidence, of future emissions from planned land use and information from state and regional air quality boards and agencies.

  - A target for the reduction of those sources of future emissions reasonably attributable to the City's discretionary land use decisions under the 2030 General Plan and the City's internal government operations, and feasible GHG emission reduction measures whose purpose shall be to meet this reduction target by regulating those sources of GHG emissions reasonably attributable to the City's discretionary land use decisions and the City's internal government operations.

Additionally, the General Plan Community Design chapter includes several policies related to GHG emissions.

- CD-I-58 Require new development to incorporate passive heating and natural lighting strategies to the extent feasible and practical. These strategies should include, but are not limited to, the following:

- Using building orientation, mass and form, including façade, roof, and choice of building materials, color, type of glazing, and insulation to minimize heat loss during winter months and heat gain during the summer months;
- Designing building openings to regulate internal climate and maximize natural lighting, while keeping glare to a minimum; and
- Reducing heat-island effect of large concrete roofs and parking surfaces.

- CD-I-60 Incorporate green building standards into the Zoning Ordinance and building code to ensure a high level of energy efficiency in new development, retrofitting projects, and City facilities. These standards should include, but are not limited to, the following:

    - Require the use of Energy Star® appliances and equipment in new and substantial renovations of residential development, commercial development, and City facilities;
    - Require all new City facilities and new residential development incorporate green building methods to qualify for the equivalent of LEED Certified "Silver" rating or better (passive solar orientation must be a minimum component);
    - Require all new residential development to be pre-wired for optional photovoltaic roof energy systems and/or solar water heating on south facing roofs; and
    - Require all new projects that will use more than 40,000 kilowatt hours per year of electricity to install photovoltaic energy systems.

- CD-I-61 Adopt a Green Building Design Ordinance. Green Building Design Guidelines may include required and recommended "green" design and construction strategies including: Building Site and Form, Natural Heating or Cooling, Transportation, Building Envelope and Space Planning, Building Materials, Water Systems, Electrical Systems, HVAC Systems, Construction Management, and Commissioning.

- CD-I-62 Facilitate environmentally sensitive construction practices by:

    - Restricting use of chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs) and halons in mechanical equipment and building materials;
    - Promoting use of products that are durable and allow efficient end-of-life disposal (recyclable);

- Requiring subdivision applications on sites greater than five acres to submit a construction waste management plan for City approval;
- Promoting the purchase of locally or regionally available materials; and
- Promoting the use of cost-effective design and construction strategies that reduce resource and environmental impacts.

**Waste Diversion**

With the passage of SB 1016, the Per Capita Disposal Measurement System, only per capita disposal rates are measured. Targets are based on the per capita disposal rates. The Kings Waste and Recycling Authority's disposal rate for 2019 was 4.1 pounds per person per day, which is well below the target of 4.4 pounds per person per day.[40]

## Thresholds of Significance

The significance criteria for assessing the impacts from GHG emissions are derived from the CEQA Environmental Checklist. According to the CEQA Checklist, a project causes potentially significant impacts if it would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions.

## Impacts and Mitigation Measures

Section 15064.4(b) of the 2021 CEQA Guidelines for GHG emissions states that a lead agency may take into account the following three considerations in assessing the significance of impacts from GHG emissions.

[40] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 71.

- Consideration #1: The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting.
- Consideration #2: Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
- Consideration #3: The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project. In determining the significance of impacts, the lead agency may consider a project's consistency with the State's long-term climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is not cumulatively considerable.

The City of Lemoore has not yet adopted its own GHG thresholds or prepared a Greenhouse Gas Reduction Plan that can be used as a basis for determining the Project's level of significance; therefore, an alternative analysis approach is required. In the absence of a local plan, CEQA allows lead agencies to use Statewide or regional plans that reduce or mitigate the Project's incremental contribution of greenhouse gas emissions. The SJVAPCD's *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* includes thresholds based on whether the Project will reduce or mitigate GHG levels by 29 percent from BAU levels compared with 2005 levels by 2020.[41] The required reduction to meet the 2020 target was reduced to 21.7 percent from BAU to reflect lower growth in emissions due to the 2008 recession. First occupancy at the Project site is expected to occur in 2022 with full buildout in 2038. These dates are beyond the AB 32 2020 milestone year and the SJVAPCD has not updated its guidance to address the SB 32 2030 targets. Therefore, an approach based on consistency with State plans to

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[41] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 100.

achieve 2030 targets and continued progress toward meeting the goals for 2045 and 2050 in Executive Orders signed by the Governor has been used.

The analysis prepared for the Project also includes qualitative assessments of compliance with 2008 Scoping Plan, the 2017 Scoping Plan Update, and City of Lemoore 2030 General Plan to support GHG significance findings under Impact GHG-2.

To determine significance, the analysis first quantifies project-related GHG emissions under a BAU scenario, and then compares these emissions with emissions that would occur when all project-related design features are accounted for, and when compliance with applicable regulatory measures is assumed. The standard and methodology is explained in further detail below.

**Impact 3.7-1:** *Would the project generate direct or indirect greenhouse emissions that would result in a significant impact on the environment?*

**Less Than Significant.**

*Construction*

Total GHG emissions generated during all phases of construction were combined and are presented in Table 3.7-2. The SJVAPCD does not recommend assessing the significance of construction-related emissions. However, other jurisdictions, such as the South Coast Air Quality Management District (SCAQMD) and the (Sacramento Metropolitan Air Quality Management District SMAQMD, have concluded that construction emissions should be included since they may remain in the atmosphere for years after construction is complete. In order to account for the construction emissions, amortizations of the total emissions generated during construction were based on the life of the development (residential—30 years) and added to the operational emissions.

**Table 3.7-2**
**Stationary Source Greenhouse Gas Emissions[42]**

| Phase/Year | $MTCO_2e$ per year |
|---|---|
| Phase 1 2022 | 577.85 |
| Phase 1 2023 | 520.77 |
| Phase 1 2024 | 519.68 |

[42] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 104.

| | |
|---|---|
| Phase 1 2025 | 193.29 |
| Phase 2 2026 | 695.92 |
| Phase 2 2027 | 718.48 |
| Phase 2 2028 | 709.68 |
| Phase 2 2029 | 241.63 |
| Phase 3 2030 | 502.06 |
| Phase 3 2031 | 414.09 |
| Phase 3 2032 | 116.78 |
| Phase 4 2034 | 570.94 |
| Phase 4 2035 | 438.26 |
| Phase 4 2036 | 439.94 |
| Phase 4 2037 | 180.79 |
| **Total** | **6,840.15** |
| ***Amortized over 30 years*** | ***228.01*** |

Notes:
Calculation totals use unrounded numbers from CalEEMod output.
$MTCO_2e$ = metric tons of carbon dioxide equivalents
Source: CalEEMod output (Appendix B).

*Operation*

Operational or long-term emissions occur over the life of the Project. Sources of emissions may include motor vehicles and trucks, energy usage, water usage, waste generation, and area sources, such as landscaping activities and residential wood burning.

**Business As Usual Operational Emissions**

Operational emissions under the BAU scenario were modeled using CalEEMod 2016.3.2. Modeling assumptions for the year 2005 were used to represent 2038 BAU conditions (without the benefit of regulations adopted to reduce GHG emissions). The SJVAPCD guidance recommends using emissions in 2002–2004 in the baseline scenario to represent conditions—as if regulations had not been adopted—to allow the effect of projected growth on achieving reduction targets to be clearly defined. CalEEMod defaults were used for Project energy usage, water usage, waste generation, and area sources (architectural coating, consumer products, and landscaping). The vehicle fleet mix was revised to reflect the residential fleet mix approved by SJVAPCD for 2038, which is when buildout of the final phase of development is expected to occur. Full assumptions and CalEEMod model outputs are provided in Appendix B.

**2038 Operational Emissions**

Operational emissions were modeled for the year 2038 using CalEEMod. CalEEMod assumes compliance with some, but not all, applicable rules and regulations regarding energy efficiency, vehicle fuel efficiency, renewable energy usage, and other GHG reduction policies, as described in the CalEEMod User's Guide.[43] The reductions obtained from each regulation and the source of the reduction amount used in the analysis are described below.

*Emissions Accounting for Applicable Regulations*

The following regulations are incorporated into the CalEEMod emission factors:

- Pavley I and Pavley II (LEV III) motor vehicle emission standards
- ARB Medium and Heavy-Duty Vehicle Regulation
- 2005, 2008, 2013, and 2016 Title 24 Energy Efficiency Standards

The following regulations have not been incorporated into the CalEEMod emission factors and require alternative methods to account for emission reductions provided by the regulations:

- Renewable Portfolio Standards (RPS)
- Low Carbon Fuel Standard (LCFS)
- Green Building Code Standards (indoor water use)
- California Model Water Efficient Landscape Ordinance (Outdoor Water)

Pavley II/LEV III standards have been incorporated in the latest version of CalEEMod. ARB estimates a 3 percent reduction in 2020 and a 19 percent reduction from the vehicle categories subject to the regulation by 2030.[44]

The ARB GHG Regulation for Medium and Heavy-Duty Engines and Vehicles applies to trucks that will be accessing the Project site. The benefits of the regulation were incorporated into

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[43] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 104.

[44] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 105.

CalEEMod 2016.3.2. The ARB estimates that this regulation will reduce GHG emissions from the affected vehicles by 7.2 percent.[45]

The Low Carbon Fuel Standard (LCFS) is estimated to achieve a 10 percent reduction in emissions by 2020 and a 20 percent reduction by 2030[46]. CalEEMod does not include credit for the LCFS.

Title 24 reductions for 2013 and 2016 updates were added to CalEEMod 2016.3.2. The California Energy Commission (CEC) estimates that 2013 Title 24 standards would result in an increase in energy efficiency of 25 percent in residential buildings compared to 2008 Title 24 (CEC 2014a). An additional 28 percent reduction from the 2008 standards have been credited for compliance with 2016 Title 24. This results in a combined reduction of 46 percent.[47] Compliance with 2019 Title 24 is expected to reduce residential energy use by 7 percent beyond 2016 Title 24 prior to accounting for the installation of solar panels.[48] 2019 Title 24 requires new residential development include solar panels to generate electricity. The Project is expected to include solar panels on each single-family residential unit in quantities that meet or exceed Title 24 requirements. Apartments also have requirements for solar panels, but the amount can vary due to roof space constraints and other site considerations.

RPS is not accounted for in CalEEMod 2016.3.2. Reductions from RPS are addressed by revising the electricity emission intensity factor in CalEEMod to account for the utility RPS rate forecast for 2020[49]. PG&E provides emission factors for the electricity it provides to customers and projections for its energy portfolio for 2020 that is used to estimate Project emissions. No data to reflect compliance in 2030 or 2038 was included in the PG&E projections. The utilities will be required by SB 100 to increase the use of renewable energy sources to 60 percent, but details on individual utility compliance have not been determined.

Energy savings from water conservation resulting from the Green Building Code Standards for indoor water use and California Model Water Efficient Landscape Ordinance for outdoor water use are not included in CalEEMod. The Water Conservation Act of 2009 mandates a 20 percent

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45 Ibid.

46 Ibid.

47 Ibid.

48 Ibid.

49 Ibid. Page 106.

reduction in urban water use that is implemented with these regulations.[50] Benefits of the water conservation regulations are applied in the CalEEMod mitigation component.

Reductions in emissions from solid waste are based on the City achieving the CalRecycle 75 Percent Initiative by 2020 compared with a 50 percent baseline for 2005. Reductions are taken using the CalEEMod mitigation component.

Regulations applicable to Project sources and the percent reduction anticipated from each source are shown in Table 3.7-3. The percentage reductions are only applied to the specific sources subject to the regulations. For example, the Pavley LEV Standards apply only to light duty cars and trucks.

**Table 3.7-3**
**Construction Greenhouse Gas Emissions[51]**

| Regulation | Project Applicability | Reduction Source | Percent Reduction in 2020 and 2030 |
|---|---|---|---|
| Pavley Low Emission Vehicle Standards | Light-duty cars and trucks accessing the site are subject to the regulation. | CalEEMod defaults (Pavley I) | 25.1[1] |
| | | Adjusted GHG emission factor (Pavley II/LEV III) in CalEEMod. | 3% 2020<br>19.5% 2030[2] |
| Truck and Bus Regulation | Heavy-duty trucks accessing the site for deliveries and services are subject to the regulation. | Adjusted GHG emission factors for the regulation in CalEEMod | 7.2%[3] |
| Low Carbon Fuel Standard (LCFS) | Vehicles accessing the site will use fuel subject to the LCFS | CalEEMod defaults | 10% 2020<br>20% 2030[1] |
| Title 24 Energy Efficiency Standards | Project buildings will be constructed to meet the latest version of Title 24 (currently 2016). Reduction applies only to energy consumption subject to the regulation. | CalEEMod defaults | 35%[4,5] |

[50] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 106.
[51] Ibid.

| Regulation | Project Applicability | Reduction Source | Percent Reduction in 2020 and 2030 |
|---|---|---|---|
| Green Building Code Standards | The project will include water conservation features required by the standard | CalEEMod mitigation component | 20%[6] |
| Water Efficient Land Use Ordinance | The project landscaping will comply with the regulation | CalEEMod mitigation component | 20%[7] |
| Renewable Portfolio Standard (RPS) | Electricity purchased for use at the project site is subject to the 33 percent RPS mandate | CalEEMod adjusted energy intensity factors with PG&E emission factors that show the company will exceed the 33 percent mandate. | 54.5%[8] |
| Solid waste | The solid waste service provider will need to provide programs to increase diversion and recycling to meet the 75 percent mandate. | CalEEMod mitigation component | 25%[9] |

Notes:
Regulations are described in Section 2.3 Regulatory Environment. The source of the percentage reductions from each measure are from the following sources, see Appendix B for full reference:

1 Pavley 1 + Low Carbon Fuel Standard Postprocessor Version 1.0 User's Guide (ARB 2010b)
2 ARB Staff Report for LEV III Amendments (ARB 2013e)
3 ARB Staff Report for GHG Regulations for Medium and Heavy-Duty Engines and Vehicles (ARB 2013f)
4 California Energy Commission News Release: New Title 24 Standards Will Cut Residential Energy Use by 25 Percent, Save Water, and Reduce Greenhouse Gas Emissions (CEC 2014b)
5 California Energy Commission Adoption Hearing Presentation: 2016 Buildings Energy Efficiency Standards (CEC 2015)
6 2013 California Green Building Standards Code Section 5.303.2
7 California Water Plan Update 2013 (CDWR 2013)
8 Based on CalEEMod default PG&E rate for 2005 and PG&E projected emission factor for 2020
9 CalRecycle 75 Percent Initiative: Defining the Future (2016b)

In addition to rules and regulations, the Project would incorporate design features and would obtain benefits from its location and infrastructure that would reduce Project vehicle miles traveled (VMT) compared with default values. The Project would construct pedestrian infrastructure connecting to adjacent land uses. In addition, the Project would provide electrical outlets for landscaping equipment that would be used in accordance with statewide usage rates for this type of equipment. The Project is located approximately 1.2 miles from existing development in Downtown Lemoore, providing shorter-than-average trip lengths to important destinations.

Note that CalEEMod nominally treats these design elements and conditions as "mitigation measures," despite their inclusion in the Project description. Therefore, reported operational emissions are considered to represent unmitigated Project conditions. Full assumptions and model outputs are provided in Appendix B and results of this analysis for Project buildout in 2038 are presented in Table 3.7-4.

**Table 3.7-4**
**Project Operational Greenhouse Gases[52]**

| Source | Emissions ($MTCO_2e$ per year) | | |
|---|---|---|---|
| | **Business as Usual** | **2038 (with Regulation and Design Features)** | **Percent Reduction** |
| Area | 1,023.51 | 336.60 | 67.11% |
| Energy | 2,600.75 | 1,623.29 | 37.6% |
| Mobile | 8,792.91 | 3,899.51 | 55.7% |
| Waste | 330.69 | 248.02 | 25.0% |
| Water | 185.08 | 96.27 | 48.0% |
| Amortized Construction Emissions | 228.01 | 228.01 | 0.0% |
| **Total** | **13,160.93** | **6,431.69** | **51.1%** |
| | Reduction from BAU | **6,729.24** | — |
| | Percent Reduction | **51.1%** | — |
| | Significance Threshold | **21.7%** | — |
| | **Are emissions significant?** | **No** | |

Notes:
$MTCO_2e$ = metric tons of carbon dioxide equivalents
The project achieves the SJVAPCD 29 percent reduction from BAU threshold and the 21.7 percent required to show consistency with AB 32 targets.
Source: CalEEMod output (Appendix B).

As shown in Table 3.7-4, the Project operations in 2038 would achieve a reduction from BAU of 51.1 percent, which exceeds the 21.7 percent reduction required by the State to achieve the 2020 target by 29.4 percent and the SJVAPCD 29.0 percent target by 21.4 percent. No new threshold has been adopted by the City of Lemoore or the SJVAPCD for the 2030 target so, in the interim, the Project must make continued progress toward the SB 32 2030 target.

[52] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 108.

The Project includes design features that would result in reductions in energy use and support walking and bicycling. Measures that are part of the Project design do not require additional mitigation measures to ensure they are accomplished.

The 51.1 percent reduction from BAU is 29.4 percent beyond the average reduction required by the State from all sources to achieve the AB 32 2020 target and makes substantial progress toward the SB 32 2030 target and later Executive Order goals, and therefore addresses the concern expressed in Newhall Ranch that projects should likely do more than the average to ensure they are providing a fair share of emission reductions.

The analysis presented above does not include new strategies proposed in the 2017 Scoping Plan Update. The update was adopted in December 2017. The update provides alternatives in terms of their likelihood of implementation and ranges of reduction from the strategies. Measures already authorized by legislation are highly likely to be implemented, while measures requiring new legislation are less likely to go forward. The State is highly likely to incorporate zero net energy buildings in future updates to Title 24 and now requires solar panels in most residential development. A new round of motor vehicle fuel efficiency standards beyond 2025 when LEV III standards are at their maximum reduction level is highly likely. Changing heavy-duty trucks and off-road equipment to alternative fuels face greater technological hurdles and are less likely to provide dramatic reductions by 2030; however, the ARB recently approved the Advanced Clean Trucks regulation that requires increasing percentages of zero emission trucks between 2024 and 2035 (ARB 2020b). The development of a new Scoping Plan to address post-2030 targets would occur when new targets for 2040 and 2050 are legislated.

The 2030 emission limit is 260 MMTCO2e. The ARB estimates that the 2030 BAU (reference) Inventory will be 392 MMTCO2e—a reduction of 132 MMCO2e, including existing policies and programs but not including known commitments that are already underway. The 2017 Scoping Plan Update includes the estimated GHG emissions by sector compared with 1990 levels that is presented in Table 3.8-5. The proposed plan would achieve the bulk of the reductions from Electric Power, Industrial fuel combustion, and Transportation. Cap-and-Trade would provide between 10 and 20 percent of the required reductions depending on the amounts achieved by the other reduction measures.

**Table 3.7-5**
**2017 Scoping Plan Update Estimated Change in GHG Emissions by Sector[53]**

| | Emissions ($MMTCO_2e$ per year) | | |
|---|---|---|---|
| **Scoping Plan Sector** | **1990** | **2030 Proposed Plan Ranges** | **Percent Change form 1990** |
| Agriculture | 26 | 24–25 | -4 to -8 |
| Residential and Commercial | 44 | 38–40 | -9 to -14 |
| Electric Power | 108 | 42–62 | -43 to -61 |
| High GWP | 3 | 8–11 | 167 to 267 |
| Industrial | 98 | 77–87 | -11 to -21 |
| Recycling and Waste | 7 | 8–9 | 14 to 29 |
| Transportation (including TCU) | 152 | 103–111 | -27 to -32 |
| Net Sink | -7 | TBD | TBD |
| **Subtotal** | **431** | **300–345** | **-20 to -30** |
| Cap-and-Trade Program | N/A | 40–85 | N/A |
| **Total** | **431** | **260** | **-40** |

Although 2017 Scoping Plan Update focuses on state agency actions necessary to achieve the 2030 GHG limit, the ARB considers local governments essential partners in achieving California's goals to reduce GHG emissions. The 2030 target will require an increase in the rate of emission reductions compared to what was needed to achieve the 2020 limit, and this will require action and collaboration at all levels, including local government action to complement and support State-level actions. For individual projects, the 2017 Scoping Plan Update suggests that all new land use development implement all feasible measures to reduce GHG emissions. The Scoping Plan does not define all feasible measures or attribute an amount of reductions required from new development beyond compliance with regulations. When requiring mitigation of a project's fair share of a cumulative impact, the Lead Agency must show the nexus between the project contribution and its fair share of mitigation to reduce the impact to less than cumulatively considerable. A threshold based on local support and collaboration with State actions as described in the 2017 Scoping Plan Update does not lend itself to a quantitative determination of fair share. Requiring developers and future residents of the development to fully mitigate

[53] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 109.

emissions without accounting for compliance with regulations would result in double mitigation, first by the developer and then by the residents purchasing electricity, fuel, and vehicles compliant with regulations in effect at the time of purchase and beyond that would violate constitutional nexus requirements.

In conclusion, the Project would achieve reductions of 29.4 percent beyond the ARB 2020 21.7 percent target and 21.4 percent beyond the SJVAPCD 29 percent reduction from BAU requirements from adopted regulations and on-site design features. No new threshold has been adopted by the City for the SB 32 2030 target; however, the reductions from BAU by 2038 are substantial with existing regulations and Project design features. Based on this progress and the strong likelihood that the measures included in the 2017 Scoping Plan Update will be implemented, it is reasonable to conclude that the Project is consistent with the 2017 Scoping Plan and will contribute a reasonable fair-share contribution to achieving the 2030 target. The fair share may very well be achieved through compliance with increasingly stringent State regulations that apply to new development, such as Title 24 and CALGreen; regulations on energy production, fuels, and motor vehicles that apply to both new and existing development; and voluntary actions to improve energy efficiency in existing development. In addition, compliance with the VMT targets adopted to comply with SB 375 and implemented through the RTP/SCS may be considered to adequately address GHG emissions from passenger cars and light-duty trucks. As shown in Table 3.7-5, the State strategy relies on the Cap-and-Trade Program to make up any shortfalls that may occur from the other regulatory strategies. The costs of Cap-and-Trade emission reductions will ultimately be passed on to the consumers of fuels, electricity, and products produced by regulated industries, which include future residents of development projects and other purchasers of products and services. Therefore, the impact in terms of Considerations #1 and #2 would be ***less than significant***.

**Mitigation Measures:**

None Required.

**Impact 3.7-2:** *Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*

**Less Than Significant.** The following analysis assesses the Project's compliance with Consideration #3 regarding consistency with adopted plans to reduce GHG emissions. The City of Lemoore 2030 General Plan was adopted in May 2008. The Project's consistency with applicable GHG policies from the GHG Reduction Plan policies is assessed below.

The Project is also assessed for its consistency with ARB's adopted Scoping Plans. This would be achieved with an assessment of the Project's compliance with Scoping Plan measures contained in the 2008 Scoping Plan and the 2017 Scoping Plan Update.

***General Plan Compliance***

The City of Lemoore 2030 General Plan was adopted in May 2008. The General Plan contains a number of goals or policies that relate directly to climate change and some of the policies in the Air Quality and Circulation Element of the General Plan would likely reduce GHG emissions as well as the other criteria pollutant emissions, because they attempt to reduce VMT and increase energy efficiency. As shown in Table 3.7-6, the Project is consistent with the feasible and applicable policies.

**Table 3.7-6**
**Consistency with General Plan Policies[54]**

| General Plan Policy | Project Consistency |
| --- | --- |
| **COS-I-38** Compile and update an inventory of greenhouse gas emissions from City operations and track related solid waste, energy, economic, and environmental data. | **Not applicable.** This measure applies to the City and not individual projects. |
| **COS-I-39** Support State efforts to reduce greenhouse gases and emissions through local action that will reduce motor vehicle use, support alternative forms of transportation, require energy conservation in new construction, and energy management in public buildings. | **Consistent.** The Project supports State efforts through compliance with adopted GHG regulations on building construction and vehicles that will access the site. |
| **COS-I-40** Prepare a Greenhouse Gas Emissions Reduction Plan, focusing on feasible actions the City can take to minimize the adverse impacts of Plan implementation on climate change and air quality. The Plan will include but will not be limited to:<br>• An inventory of all known, or reasonably discoverable, sources of greenhouse gases (GHGs) that currently exist in the City and sources that existed in 1990. In determining what is a source of GHG emissions, the City may rely on the definition of "greenhouse gas emissions source" or "source" as defined in Section 38505 of the California Global Warming Solutions Act ("AB 32") or its governing regulations. The inventory may include estimates of emissions drawing on available information from to state and regional air quality boards, supplemented by information obtained by the City.<br>• A projected inventory of the new GHGs that can reasonably be expected to be emitted in the year 2030 due to the City's discretionary land use decisions pursuant to the 2030 General Plan Update, as well as new GHGs emitted by the City's internal government operations. The projected inventories will include estimates, supported by substantial evidence, of future emissions from planned land use and information from state and regional air quality boards and agencies. | **Not applicable.** This measure applies to the City. No plan has been adopted that would require project compliance. |

54 Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 111.

| General Plan Policy | Project Consistency |
|---|---|
| **COS-I-38** Compile and update an inventory of greenhouse gas emissions from City operations and track related solid waste, energy, economic, and environmental data. | **Not applicable.** This measure applies to the City and not individual projects. |
| **COS-I-39** Support State efforts to reduce greenhouse gases and emissions through local action that will reduce motor vehicle use, support alternative forms of transportation, require energy conservation in new construction, and energy management in public buildings. | **Consistent.** The Project supports State efforts through compliance with adopted GHG regulations on building construction and vehicles that will access the site. |
| **COS-I-40** Prepare a Greenhouse Gas Emissions Reduction Plan, focusing on feasible actions the City can take to minimize the adverse impacts of Plan implementation on climate change and air quality. The Plan will include but will not be limited to:<br>• An inventory of all known, or reasonably discoverable, sources of greenhouse gases (GHGs) that currently exist in the City and sources that existed in 1990. In determining what is a source of GHG emissions, the City may rely on the definition of "greenhouse gas emissions source" or "source" as defined in Section 38505 of the California Global Warming Solutions Act ("AB 32") or its governing | **Not applicable.** This measure applies to the City. No plan has been adopted that would require project compliance. |

| General Plan Policy | Project Consistency |
|---|---|
| • A target for the reduction of those sources of future emissions reasonably attributable to the City's discretionary land use decisions under the 2030 General Plan and the City's internal government operations, and feasible GHG emission reduction measures whose purpose shall be to meet this reduction target by regulating those sources of GHG emissions reasonably attributable to the City's discretionary land use decisions and the City's internal government operations. | |
| **CD-I-58** Require new development to incorporate passive heating and natural lighting strategies to the extent feasible and practical. These strategies should include, but are not limited to, the following:<br>• Using building orientation, mass and form, including façade, roof, and choice of building materials, color, type of glazing, and insulation to minimize heat loss during winter months and heat gain during the summer months;<br>• Designing building openings to regulate internal climate and maximize natural lighting, while keeping glare to a minimum; and | **Consistent.** The Project will comply with Title 24 Building Energy Efficiency Standards that require new homes to be increasingly energy efficient. As the project is built out, new versions of Title 24 will come into effect that would determine the appropriate measures for new construction. |

| General Plan Policy | Project Consistency |
|---|---|
| **COS-I-38** Compile and update an inventory of greenhouse gas emissions from City operations and track related solid waste, energy, economic, and environmental data. | **Not applicable.** This measure applies to the City and not individual projects. |
| **COS-I-39** Support State efforts to reduce greenhouse gases and emissions through local action that will reduce motor vehicle use, support alternative forms of transportation, require energy conservation in new construction, and energy management in public buildings. | **Consistent.** The Project supports State efforts through compliance with adopted GHG regulations on building construction and vehicles that will access the site. |
| **COS-I-40** Prepare a Greenhouse Gas Emissions Reduction Plan, focusing on feasible actions the City can take to minimize the adverse impacts of Plan implementation on climate change and air quality. The Plan will include but will not be limited to:<br>• An inventory of all known, or reasonably discoverable, sources of greenhouse gases (GHGs) that currently exist in the City and sources that existed in 1990. In determining what is a source of GHG emissions, the City may rely on the definition of "greenhouse gas emissions source" or "source" as defined in Section 38505 of the California Global Warming Solutions Act ("AB 32") or its governing | **Not applicable.** This measure applies to the City. No plan has been adopted that would require project compliance. |

| General Plan Policy | Project Consistency |
|---|---|
| • Reducing heat-island effect of large concrete roofs and parking surfaces. | |
| **CD-I-60** Incorporate green building standards into the Zoning Ordinance and building code to ensure a high level of energy efficiency in new development, retrofitting projects, and City facilities. These standards should include, but are not limited to, the following:<br>• Require the use of Energy Star® appliances and equipment in new and substantial renovations of residential development, commercial development, and City facilities;<br>• Require all new City facilities and new residential development incorporate green building methods to qualify for the equivalent of LEED Certified "Silver" rating or better (passive solar orientation must be a minimum component);<br>• Require all new residential development to be pre-wired for optional photovoltaic roof energy systems and/or solar water heating on south facing roofs; and | **Consistent.** Since the General Plan was adopted, updates to the Title 24 Energy Efficiency Standards and the CalGreen Code sustainability measures exceed the energy efficiency requirements envisioned by this measure. Solar panels are now required for all single-family development and some multi-family development. With Title 24 updates planned every three years, it is not practical to continuously update the building code to meet or exceed Energy Star and LEED Silver requirements. |

| General Plan Policy | Project Consistency |
|---|---|
| **COS-I-38** Compile and update an inventory of greenhouse gas emissions from City operations and track related solid waste, energy, economic, and environmental data. | **Not applicable.** This measure applies to the City and not individual projects. |
| **COS-I-39** Support State efforts to reduce greenhouse gases and emissions through local action that will reduce motor vehicle use, support alternative forms of transportation, require energy conservation in new construction, and energy management in public buildings. | **Consistent.** The Project supports State efforts through compliance with adopted GHG regulations on building construction and vehicles that will access the site. |
| **COS-I-40** Prepare a Greenhouse Gas Emissions Reduction Plan, focusing on feasible actions the City can take to minimize the adverse impacts of Plan implementation on climate change and air quality. The Plan will include but will not be limited to:<br>• An inventory of all known, or reasonably discoverable, sources of greenhouse gases (GHGs) that currently exist in the City and sources that existed in 1990. In determining what is a source of GHG emissions, the City may rely on the definition of "greenhouse gas emissions source" or "source" as defined in Section 38505 of the California Global Warming Solutions Act ("AB 32") or its governing | **Not applicable.** This measure applies to the City. No plan has been adopted that would require project compliance. |

| General Plan Policy | Project Consistency |
|---|---|
| • Require all new projects that will use more than 40,000 kilowatt hours per year of electricity to install photovoltaic energy systems. | |
| **CD-I-61** Adopt a Green Building Design Ordinance.<br>Green Building Design Guidelines may include required and recommended "green" design and construction strategies including: Building Site and Form, Natural Heating or Cooling, Transportation, Building Envelope and Space Planning, Building Materials, Water Systems, Electrical Systems, HVAC Systems, Construction Management, and Commissioning. | **Not applicable.** This measure applies to the City. A Green Building Design Ordinance has not been adopted; however, Title 24 Energy Efficiency Standards and the CalGreen Code fulfill this measure. |
| **CD-I-62** Facilitate environmentally sensitive construction practices by:<br>• Restricting use of chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs) and halons in mechanical equipment and building materials;<br>• Promoting use of products that are durable and allow efficient end-of-life disposal (recyclable); | **Consistent.** The Project will implement construction recycling mandates through compliance with the CalGreen Code. CFCs are now restricted by the ARB Refrigerant Management Program. No large systems using refrigerants are used in residential development. Homes are constructed with materials that are primarily locally and regionally available to the extent possible. |

| General Plan Policy | Project Consistency |
|---|---|
| **COS-I-38** Compile and update an inventory of greenhouse gas emissions from City operations and track related solid waste, energy, economic, and environmental data. | **Not applicable.** This measure applies to the City and not individual projects. |
| **COS-I-39** Support State efforts to reduce greenhouse gases and emissions through local action that will reduce motor vehicle use, support alternative forms of transportation, require energy conservation in new construction, and energy management in public buildings. | **Consistent.** The Project supports State efforts through compliance with adopted GHG regulations on building construction and vehicles that will access the site. |
| **COS-I-40** Prepare a Greenhouse Gas Emissions Reduction Plan, focusing on feasible actions the City can take to minimize the adverse impacts of Plan implementation on climate change and air quality. The Plan will include but will not be limited to:<br>• An inventory of all known, or reasonably discoverable, sources of greenhouse gases (GHGs) that currently exist in the City and sources that existed in 1990. In determining what is a source of GHG emissions, the City may rely on the definition of "greenhouse gas emissions source" or "source" as defined in Section 38505 of the California Global Warming Solutions Act ("AB 32") or its governing | **Not applicable.** This measure applies to the City. No plan has been adopted that would require project compliance. |

| General Plan Policy | Project Consistency |
|---|---|
| • Requiring subdivision applications on sites greater than five acres to submit a construction waste management plan for City approval;<br>• Promoting the purchase of locally or regionally available materials; and<br>• Promoting the use of cost-effective design and construction strategies that reduce resource and environmental impacts. | |

### *Consistency with AB 32 Scoping Plan*

The Scoping Plan contains a variety of strategies to reduce the State's emissions. As shown in Table 3.8-7, the Project is consistent with most of the strategies, while others are not applicable to the Project. As discussed earlier, the 2017 Scoping Plan Update strategies primarily rely on increasing the stringency of existing regulations with which the Project would continue to comply, support through the Project's design, and implementation of the General Plan goals and policies. Although, the Project will begin construction after the 2020 target year, many of the

measures will continue to be implemented and strengthened to meet the 2030 target required by SB 32.

In summary, the Project incorporates a number of features that would minimize GHG emissions. These features are consistent with project-level strategies identified by the ARB's Scoping Plan and the City of Lemoore 2030 General Plan. The Project promotes the goals of the Scoping Plan through implementation of design measures that reduce energy consumption, water consumption, and reduction in VMT.

<u>Consistency with California's Post 2020 Targets</u>

The State's executive branch adopted several Executive Orders related to GHG emissions. Executive Orders S-3-05 and B-30-15 are two examples. Executive Order S-3-05 sets goals to reduce emissions to 1990 levels by 2020 and 80 percent below 1990 levels by 2050. The goal of Executive Order S-3-05 to reduce GHG emissions to 1990 levels by 2020 was codified by AB 32. The Project, as analyzed above, is consistent with AB 32. Therefore, the Project does not conflict with this component of Executive Order S-3-05. Executive Order B-30-15 establishes an interim goal to reduce GHG emissions to 40 percent below 1990 levels by 2030.

The 2030 goal was codified under SB 32 and is now addressed by the 2017 Scoping Plan Update. The new plan provides a strategy that is capable of reaching the SB 32 target if the measures included in the plan are implemented and achieve reductions within the ranges expected. Under the 2017 Scoping Plan Update, local government plays a supporting role through its land use authority and control over local transportation infrastructure. The Plan Update includes reductions from implementation of SB 375 that applies to VMT from passenger vehicles. Kings County targets for SB 375 are a 5 percent reduction by 2020 and a 10 percent reduction by 2035. SB 375 is implemented with the KCAG Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). The RTP/SCS envisions an increase in development density that would encourage fewer and shorter trips and more trips by transit, walking, and bicycling in amounts sufficient to achieve the SB 375 targets.

Now that the 2017 Scoping Plan has been adopted, new methodologies and threshold approaches are required to determine the fair-share contributions County development projects would need to make to achieve the 2030 target. In the meantime, however, the discussion under "Consistency with SB 32" below addresses the consistency of the proposed Project with SB 32, which provides the statutory underpinning of the 2017 Scoping Plan. The SB 32 target requires GHG emissions to be reduced by 40 percent from 1990 levels. No consensus has been reached around the State on a new quantitative target for new development based on consistency with the SB 32 target.

**Table 3.7-7**
**Project Consistency with Scoping Plan[55]**

| Scoping Plan Sector | Scoping Plan Measure | Implementing Regulations | Project Consistency |
|---|---|---|---|
| Transportation | California Cap-and-Trade Program Linked to Western Climate Initiative | Regulation for the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanism October 20, 2015 (CCR 95800) | **Consistent.** The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers. However, the regulation indirectly affects people who use the products and services produced by these industrial sources when increased cost of products or services (such as electricity and fuel) are transferred to the consumers. The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, whether generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap-and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and from combustion of other fossil fuels not directly covered at large sources in the Program's first compliance period. |
| | California Light-Duty Vehicle Greenhouse Gas Standards | Pavley I 2005 Regulations to Control GHG Emissions from Motor Vehicles<br>2012 LEV III Amendments to the California Greenhouse Gas and Criteria Pollutant Exhaust and Evaporative Emission Standards | **Consistent**. This measure applies to all new vehicles starting with model year 2012. The project would not conflict with its implementation as it would apply to all new passenger vehicles purchased in California. Passenger vehicles, model year 2012 and later, associated with construction and operation of the project would be required to comply with the Pavley emissions standards. |

55 Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 115.

| Scoping Plan Sector | Scoping Plan Measure | Implementing Regulations | Project Consistency |
|---|---|---|---|
| | Low Carbon Fuel Standard. | 2009 readopted in 2015. Regulations to Achieve Greenhouse Gas Emission Reductions Subarticle 7. Low Carbon Fuel Standard CCR 95480 | **Consistent.** This measure applies to transportation fuels utilized by vehicles in California. The Project would not conflict with implementation of this measure. Motor vehicles associated with construction and operation of the project would utilize low carbon transportation fuels as required under this measure. |
| | Regional Transportation-Related Greenhouse Gas Targets. | SB 375. Cal. Public Resources Code §§ 21155, 21155.1, 21155.2, 21159.28 | **Consistent**. The Project will provide residential development in the region that is consistent with the increased development densities promoted in the 2018 Regional Transportation Plan/Sustainable Communities Strategy (SCS). The project is not within an SCS priority area and so is not subject to requirements applicable to those areas. |
| | Goods Movement | Goods Movement Action Plan January 2007. | **Not applicable**. The Project does not propose any changes to maritime, rail, or intermodal facilities or forms of transportation. |
| | Medium/Heavy-Duty Vehicles | 2010 Amendments to the Truck and Bus Regulation, the Drayage Truck Regulation and the Tractor-Trailer Greenhouse Gas Regulation | **Consistent**. This measure applies to medium and heavy-duty vehicles that operate in the State. The project would not conflict with implementation of this measure. Medium and heavy-duty vehicles associated with construction and operation of the project would be required to comply with the requirements of this regulation. |
| | High Speed Rail | Funded under SB 862 | **Not applicable**. This is a Statewide measure that cannot be implemented by a project applicant or lead agency. |
| Electricity and Natural Gas | Energy Efficiency | Title 20 Appliance Efficiency Regulation | **Consistent.** The Project would not conflict with implementation of this measure. The project will comply with the latest energy efficiency standards and incorporate applicable energy |
| | | Title 24 Part 6 Energy Efficiency Standards for Residential and Non-Residential Building | |

| Scoping Plan Sector | Scoping Plan Measure | Implementing Regulations | Project Consistency |
|---|---|---|---|
| | | Title 24 Part 11 California Green Building Code Standards | efficiency features designed to reduce project energy consumption. |
| | Renewable Portfolio Standard/Renewable Electricity Standard. | 2010 Regulation to Implement the Renewable Electricity Standard (33% 2020)<br>SB 350 Clean Energy and Pollution Reduction Act of 2015 (50% 2030) | **Consistent**. PG&E obtained 33 percent of its power supply from renewable sources such as solar and geothermal in 2017, and about 70 percent of the electricity it delivers is carbon-free, including nuclear and large hydroelectric facilities. The owners of residences within the project would purchase power that consists of a greater percentage of renewable sources and could install renewable solar power systems that will assist the utility in achieving exceeding the renewable mandate. |
| | Million Solar Roofs Program | Tax incentive program | **Consistent.** This measure is intended to increase solar throughout California by means of a variety of electricity providers and existing solar programs. Projects within the plan area will be able to take advantage of incentives that are in place at the time of construction. The project includes installation of solar panels. |
| Water | Water | Title 24 Part 11 California Green Building Code Standards<br>SBX 7-7—The Water Conservation Act of 2009<br>Model Water Efficient Landscape Ordinance [MWELO] | **Consistent.** The Project will comply with the California Green Building Standards Code, which requires a 20 percent reduction in indoor water use. The Project will also comply with the MWELO as required by the City's development code and water ordinance. |
| Green Buildings | Green Building Strategy | Title 24 Part 11 California Green Building Code Standards | **Consistent.** The State will increase the use of green building practices. The project would implement required green building strategies through existing regulation that requires the project to comply with various CALGreen requirements. The project includes sustainability design features that support the Green Building Strategy. |
| Industry | Industrial Emissions | 2010 ARB Mandatory Reporting Regulation | **Not Applicable.** The project is not an industrial land use. |

| Scoping Plan Sector | Scoping Plan Measure | Implementing Regulations | Project Consistency |
|---|---|---|---|
| Recycling and Waste Management | Recycling and Waste | Title 24 Part 11 California Green Building Code Standards<br>AB 341 Statewide 75 Percent Diversion Goal | **Consistent.** The Project would not conflict with implementation of these measures. The project is required to achieve the recycling mandates via compliance with the CALGreen code. The project would utilize City of Lemoore recycling services. |
| Forests | Sustainable Forests | Cap-and-Trade Offset Projects | **Not applicable.** The Project site is in an area designated for urban uses. No forested lands exist on-site. |
| High Global Warming Potential | High Global Warming Potential Gases | ARB Refrigerant Management Program CCR 95380 | **Not applicable.** The regulations are applicable to refrigerants used by large air conditioning systems and large commercial and industrial refrigerators and cold storage system. Homes do not use large systems subject to the refrigerant management regulations adopted by ARB. |
| Agriculture | Agriculture | Cap-and-Trade Offset Projects for Livestock and Rice Cultivation | **Not applicable.** The Project site is proposed for urban development. No grazing, feedlot, or other agricultural activities that generate manure occur currently exist on-site or are proposed to be implemented by the project. |
| Source of ARB Scoping Plan Reduction Measures: California Air Resources Board 2008. | | | |

The Executive Order S-3-05 2050 target has not been codified by legislation. Studies have shown that, in order to meet the 2050 target, aggressive pursuit of technologies in the transportation and energy sectors, including electrification and the decarbonization of fuel, will be required. Because of the technological shifts required and the unknown parameters of the regulatory framework in 2050, quantitatively analyzing the Project's impacts further relative to the 2050 goal is speculative for purposes of CEQA.[56]

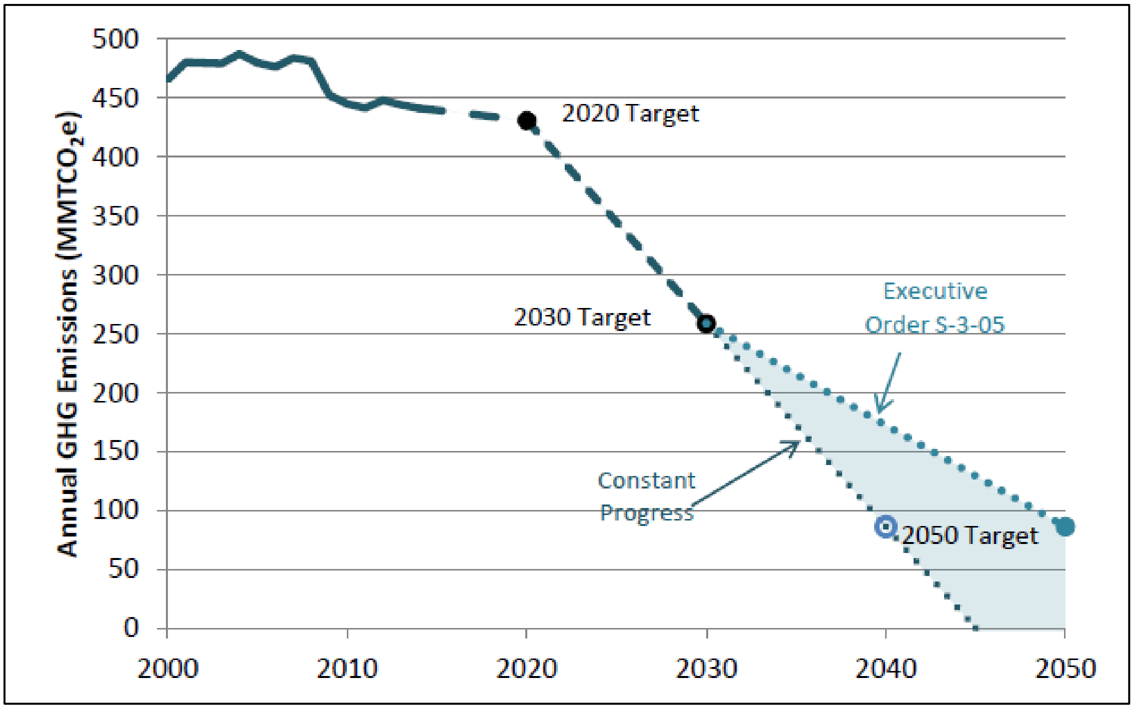
The ARB recognized that AB 32 established an emissions reduction trajectory that will allow California to achieve the more stringent 2050 target: "These [greenhouse gas emission reduction] measures also put the State on a path to meet the long-term 2050 goal of reducing California's GHG emissions to 80 percent below 1990 levels. This trajectory is consistent with the reductions that are needed globally to stabilize the climate." In addition, ARB's First Update "lays the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050," and many of the emission reduction strategies recommended by ARB would serve to reduce the proposed Project's post-2020 emissions level to the extent applicable by law:

- **Energy Sector:** Continued improvements in California's appliance and building energy efficiency programs and initiatives, such as the State's zero net energy building goals, would serve to reduce the proposed Project's emissions level. Additionally, further additions to California's renewable resource portfolio would favorably influence the proposed Project's emissions level.
- **Transportation Sector:** Anticipated deployment of improved vehicle efficiency, zero emission technologies, lower carbon fuels, and improvement of existing transportation systems all will serve to reduce the proposed Project's emissions level.
- **Water Sector:** The proposed Project's emissions level will be reduced as a result of further desired enhancements to water conservation technologies.
- **Waste Management Sector:** Plans to further improve recycling, reuse and reduction of solid waste will beneficially reduce the proposed Project's emissions level.

[56] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 119.

For the reasons described above, the Project's post-2020 emissions trajectory is expected to follow a declining trend, consistent with the 2030 and 2050 targets. The trajectory required to achieve the post-2020 targets is shown in Figure 3.7-4.

**Figure 3.7-4**
**California's Path to Achieving the 2050 Target[57]**




In his January 2015 inaugural address, Governor Brown expressed a commitment to achieve "three ambitious goals" that he would like to see accomplished by 2030 to reduce the State's GHG emissions:

- Increasing the State's Renewable Portfolio Standard from 33 percent in 2020 to 50 percent in 2030;
- Cutting the petroleum use in cars and trucks in half; and
- Doubling the efficiency of existing buildings and making heating fuels cleaner.

These expressions of executive branch policy may be manifested in adopted legislative or regulatory action through the state agencies and departments responsible for achieving the

[57] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 120.

State's environmental policy objectives, particularly those relating to global climate change.[58] Further, recent studies show that the State's existing and proposed regulatory framework will allow the State to reduce its GHG emissions level to 40 percent below 1990 levels by 2030, and to 80 percent below 1990 levels by 2050. Even though these studies did not provide an exact regulatory and technological roadmap to achieve the 2030 and 2050 goals, they demonstrated that various combinations of policies could allow the statewide emissions level to remain very low through 2050, suggesting that the combination of new technologies and other regulations not analyzed in the studies could allow the State to meet the 2050 target.[59]

Given the proportional contribution of mobile source-related GHG emissions to the State's inventory, recent studies also show that relatively new trends—such as the increasing importance of web-based shopping, the emergence of different driving patterns by the "millennial" generation, and the increasing effect of web-based applications on transportation choices—are beginning to substantially influence transportation choices and the energy used by transportation modes. These factors have changed the direction of transportation trends in recent years and will require the creation of new models to effectively analyze future transportation patterns and the corresponding effect on GHG emissions. For the reasons described above, the proposed Project's post-2020 emissions trajectory is expected to follow a declining trend, consistent with the 2030 and 2050 targets.

Consistency with SB 32

The 2017 Climate Change Scoping Plan includes the strategy that the State intends to pursue to achieve the 2030 targets of Executive Order S-3-05 and SB 32. The 2017 Scoping Plan includes the following summary of its overall strategy for reaching the 2030 target:

- SB 350
  - Achieve 50 percent Renewables Portfolio Standard (RPS) by 2030 (Now 60 percent per SB 100).
  - Doubling of energy efficiency savings by 2030.
- Low Carbon Fuel Standard (LCFS)

[58] Ibid. Page 121.

[59] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 121.

- Increased stringency (reducing carbon intensity 18 percent by 2030, up from 10 percent in 2020) (Now 20 percent in 2030).

- Mobile Source Strategy (Cleaner Technology and Fuels Scenario)
  - Maintaining existing GHG standards for light- and heavy-duty vehicles.
  - Put 4.2 million zero-emission vehicles (ZEVs) on the roads.
  - Increase ZEV buses, delivery and other trucks.
- Sustainable Freight Action Plan
  - Improve freight system efficiency.
  - Maximize use of near-zero emission vehicles and equipment powered by renewable energy.
  - Deploy over 100,000 zero-emission trucks and equipment by 2030.
- Short-Lived Climate Pollutant (SLCP) Reduction Strategy
  - Reduce emissions of methane and hydrofluorocarbons 40 percent below 2013 levels by 2030.
  - Reduce emissions of black carbon 50 percent below 2013 levels by 2030.
- SB 375 Sustainable Communities Strategies
  - Increased stringency of 2035 targets.
- Post-2020 Cap-and-Trade Program
  - Declining caps, continued linkage with Québec, and linkage to Ontario, Canada.
  - ARB will look for opportunities to strengthen the program to support more air quality co-benefits, including specific program design elements. In Fall 2016, ARB staff described potential future amendments including reducing the offset usage limit, redesigning the allocation strategy to reduce free allocation to support increased technology and energy investment at covered entities and reducing allocation if the covered entity increases criteria or toxics emissions over some baseline.

- By 2018, develop Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

Table 3.7-8 provides an analysis of the Project's consistency with the 2017 Scoping Plan Update

**Table 3.7-8**
**Consistency with SB 32 2017 Scoping Plan Update[60]**

| Scoping Plan Measure | Project Consistency |
|---|---|
| **SB 350 50% Renewable Mandate.** Utilities subject to the legislation will be required to increase their renewable energy mix from 33% in 2020 to 50% in 2030. | **Consistent**: The project will purchase electricity from a utility subject to the SB 350 Renewable Mandate. |
| **SB 350 Double Building Energy Efficiency by 2030.** This is equivalent to a 20 percent reduction from 2014 building energy usage compared to current projected 2030 levels | **Not Applicable.** This measure applies to existing buildings. New structures are required to comply with Title 24 Energy Efficiency Standards that are expected to increase in stringency until residential housing achieves zero net energy. |
| **Low Carbon Fuel Standard.** This measure requires fuel providers to meet an 18 percent reduction in carbon content by 2030. | **Consistent.** Vehicles accessing the project site will use fuel containing lower carbon content as the fuel standard is implemented. |
| **Mobile Source Strategy (Cleaner Technology and Fuels Scenario).** Vehicle manufacturers will be required to meet existing regulations mandated by the LEV III and Heavy-Duty Vehicle programs. The strategy includes a goal of having 4.2 million ZEVs on the road by 2030 and increasing numbers of ZEV trucks and buses. | **Consistent.** Project residents can be expected to purchase increasing numbers of more fuel efficient and zero emission cars and trucks each year. The 2016 CALGreen Code requires electrical service in new single-family housing to be EV charger-ready. Home deliveries will be made by increasing numbers of ZEV delivery trucks. |
| **Sustainable Freight Action Plan** The plan's target is to improve freight system efficiency 25 percent by increasing the value of goods and services produced from the freight sector, relative to the amount of carbon that it produces by 2030. This would be achieved | **Not Applicable.** The measure applies to owners and operators of trucks and freight operations. However, home deliveries are expected to be made by increasing number of ZEV delivery trucks. |

[60] Air Quality and Greenhouse Gas Analysis Report for the Lacey Ranch Area Master Plan. Prepared by Mitchell Air Quality Consulting. See Appendix B, page 122.

| Scoping Plan Measure | Project Consistency |
|---|---|
| by deploying over 100,000 freight vehicles and equipment capable of zero emission operation and maximize near-zero emission freight vehicles and equipment powered by renewable energy by 2030. | |
| **Short-Lived Climate Pollutant (SLCP) Reduction Strategy.** The strategy requires the reduction of SLCPs by 40 percent from 2013 levels by 2030 and the reduction of black carbon by 50 percent from 2013 levels by 2030. | **Consistent.** The Project will include only natural gas hearths that produce very little black carbon compared to woodburning fireplaces and heaters. |
| **SB 375 Sustainable Communities Strategies.** Requires Regional Transportation Plans to include a sustainable community strategy for reduction of per capita vehicle miles traveled. | **Consistent.** The Project will provide residential development in the region that is consistent with the Regional Transportation Plan/Sustainable Communities Strategy (SCS) strategy to increase development densities to reduce VMT. The project is not within an SCS priority area and so is not subject to requirements applicable to those areas. |
| **Post-2020 Cap-and-Trade Program.** The Post 2020 Cap-and-Trade Program continues the existing program for another 10 years. The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers. | **Consistent.** The post-2020 Cap-and-Trade Program indirectly affects people who use the products and services produced by the regulated industrial sources when increased cost of products or services (such as electricity and fuel) are transferred to the consumers. The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, whether generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap-and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and from combustion of other fossil fuels not |

| Scoping Plan Measure | Project Consistency |
|---|---|
| | directly covered at large sources in the program's first compliance period. |
| **Natural and Working Lands Action Plan.** The ARB is working in coordination with several other agencies at the federal, state, and local levels, stakeholders, and with the public, to develop measures as outlined in the Scoping Plan Update and the governor's Executive Order B-30-15 to reduce GHG emissions and to cultivate net carbon sequestration potential for California's natural and working land. | **Not Applicable.** The Project is residential development and will not be considered natural or working lands. |

Regarding goals for 2050 under Executive Order S-3-05, at this time it is not possible to quantify the emissions savings from future regulatory measures, as they have not yet been developed; nevertheless, it can be anticipated that operation of the Project would comply with whatever measures are enacted that state lawmakers decide would lead to an 80 percent reduction below 1990 levels by 2050. In its 2008 Scoping Plan, ARB acknowledged that the "measures needed to meet the 2050 are too far in the future to define in detail." In the First Scoping Plan Update; however, ARB generally described the type of activities required to achieve the 2050 target: "energy demand reduction through efficiency and activity changes; large scale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and rapid market penetration of efficiency and clean energy technologies that requires significant efforts to deploy and scale markets for the cleanest technologies immediately." The 2017 Scoping Plan provides an intermediate target that is intended to achieve reasonable progress toward the 2050 target.

As demonstrated in the impact analysis above, the Project would achieve a 51.1 percent reduction from the BAU inventory by 2038 with only adopted regulations and Project design features; therefore, the Project would not significantly hinder or delay the State's ability to meet the reduction targets contained in AB 32 or SB 32 or conflict with implementation of the Scoping Plan. The Project promotes the goals of the Scoping Plan through implementation of design measures that reduce energy consumption, water consumption, and reduction in VMT. Therefore, the Project does not conflict with any plans to reduce GHG emissions. The impact would be less than significant.

Accordingly, taking into account the proposed Project's emissions, Project design features, and the progress being made by the State towards reducing emissions in key sectors such as transportation, industry, and electricity, the Project would be consistent with State GHG Plans and would further the State's goals of reducing GHG emissions to 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050, and does not obstruct their attainment. Impacts are ***less than significant.***

**Mitigation Measures:**

None Required.

**Cumulative Impacts**

**Less Than Cumulatively Considerable.** The State of California, through AB 32, has acknowledged that GHG emissions are a Statewide impact. The adopted CEQA Guidelines provide regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents, while giving lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHG and global climate change impacts. Although the Project is expected to emit GHGs, the emission of GHGs by a single project into the atmosphere is not itself necessarily an adverse environmental effect. Rather, it is the increased accumulation of GHG from more than one project and many sources in the atmosphere that may result in global climate change. The resultant consequences of that climate change can cause adverse environmental effects. A project's GHG emissions typically would be very small in comparison to state or global GHG emissions and, consequently, they would, in isolation, have no significant direct impact on climate change. The State has mandated a goal of reducing Statewide emissions to 1990 levels by 2020 and reducing Statewide emissions to 40% below 1990 levels by 2030, even though Statewide population and commerce are predicted to continue to expand. In order to achieve this goal, CARB is in the process of establishing and implementing regulations to reduce Statewide GHG emissions. Currently, there are no applicable CARB, SJVAPCD, or the City significance thresholds or specific reduction targets, and no approved policy or guidance to assist in determining significance at the project or cumulative levels. However, as discussed above, while the City has not developed a quantified threshold of significance for GHG emissions, a project found to contribute to a net decrease in GHG emissions and found to be consistent with the adopted implementation of the CARB Climate Change Scoping Plan is presumed to have less than significant GHG impacts.

Emission generated by the Project combined with past, present, and reasonably probable future projects could contribute to this impact. The California Governor's Office of Planning and Research acknowledges that although climate change is cumulative in nature, not every individual project that emits GHGs must necessarily be found to contribute to a significant cumulative impact on the environment.

CEQA Guidelines Section 15130 notes that sometimes the only feasible mitigation for cumulative impacts may be to adopt ordinances or regulations rather than impose conditions on a project-by-project basis. Global climate change is this type of issue. GHG impacts are considered to be exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective (CAPCOA, 2008). Causes and effects are not just regional or Statewide, they are worldwide. Because the project's operational GHG emissions would be offset and no mitigation is required, any other feasible reductions would be accomplished through CARB regulations adopted pursuant to AB 32. Cumulative impacts of the Project on global climate change would be less than significant.

As discussed above, the proposed Project would not generate significant GHG emissions and would be consistent with GHG reduction plans. Therefore, the proposed Project's incremental contribution would be ***less than cumulatively considerable.***

# 3.8 Hazards and Hazardous Materials

This section of the DEIR identifies potential impacts of the proposed Project pertaining to hazards and hazardous materials, proximity to airports/schools, and assessment of wildfire risk. A *Phase I Environmental Site Assessment* was prepared by Partner Engineering and Science, Inc. for the Project (See Appendix F).

## Environmental Setting

Project Site

The proposed Project site is currently agricultural land. On-site operations consist of the cultivation of alfalfa. In addition to the on-site agricultural land, the subject property is also improved with a diesel-powered irrigation well with an associated 10,000-gallon diesel aboveground storage tank (AST), two electrically powered irrigation wells, a lift pump, an irrigation canal, and unpaved roads the surround and bisect the parcel.

According to available historical sources, the subject property was formerly undeveloped land as early as 1927; developed with residential and agricultural uses in 1950 to 1954; and has been developed as agricultural land from at least 1950 to the present.[1]

The immediately surrounding properties consist of rural residences and agricultural land to the north across West Lacey Boulevard; single-family residences to the south; an orchard to the east; and a City of Lemoore municipal well and 18th Avenue to the west, beyond which is an orchard and a rural residence.

Hazardous Materials

A hazardous material is a substance or combination of substances which, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may either (1) cause or significantly contribute to an increase in mortality or an increase in serious, irreversible, or incapacitating irreversible illness; or (2) pose a substantial present or potential hazard to human health and safety, or the environment when improperly treated, stored, transported, or disposed of.

Hazardous materials include a variety of substances such as lubricants, herbicides and pesticides, solvents, gasoline, household cleaning products, refrigerants, and radioactive substances. Some

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[1] Phase I ESA (March 2019), *Partner Engineering and Science, Inc.*, page i.

are common to industrial and commercial process, while others are commonly used in households. A hazardous waste is simply the spent or used hazardous material that requires disposal. Improper transport, storage, handling, use and disposal of hazardous wastes can have significant impacts on the environment and human health.

Hazardous Sites

The Cortese List is a planning document used by the State, local agencies, and landowners to comply with the California Environmental Quality Act requirements in providing information about the location of hazardous materials release sites. Government Code Section 65962.5 requires the California Environmental Protection Agency to develop at least annually an updated Cortese List. The California Department of Toxic Substances Control (DTSC) and the State Water Resources Control Board (SWRCB) are responsible for a portion of the information contained in the Cortese List. Other State and local government agencies are required to provide additional hazardous material release information for the Cortese List.

DTSC maintains the *Envirostor Data Management System*, which provides information on hazardous waste facilities (both permitted and corrective action) as well as any available site cleanup information. This site cleanup information includes: Federal Superfund Sites (NPL), State Response Sites, Voluntary Cleanup Sites, School Cleanup Sites, Corrective Action Sites, Tiered Permit Sites, and Evaluation / Investigation Sites. The hazardous waste facilities include: Permitted–Operating, Post---Closure Permitted, and Historical Non---Operating. According to the DTSC, there no active cleanup sites within an 8-mile radius of the proposed Project site.[2] The nearest closed or inactive cleanup is located at Cinnamon Elementary School, approximately one mile south of the Project site. The school is listed as inactive and no action has been required as of 1999.

GeoTracker is the SWRCB's data management system for managing sites that impact groundwater, especially those that require groundwater cleanup (Underground Storage Tanks, Department of Defense, Site Cleanup Program) as well as permitted facilities such as operating USTs and land disposal sites. There are four locations within one mile of the proposed Project site that are listed in the GeoTracker database for Leaking Underground Storage Tanks (LUST).[3] Three of the four locations have undergone LUST cleanup and the State has closed each case. The fourth site is open and undergoing verification monitoring as of 1/8/2020. That site is located at

[2] California Department of Toxic Substances Control. Envirostor Database. https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=lemoore+ca. Accessed June 2021.
[3] California Water Resource Control Board. GeoTracker Database. https://geotracker.waterboards.ca.gov/map/. Accessed June 2021.

1104-1290 N. Lemoore Avenue, Lemoore, CA 93245. This was the location of two dry cleaning facilities. As a result of past operations and practices associated with the dry cleaning activities, the site is actively being monitored and reviewed by the State Water Resources Control Board. However, due to distance and intervening land uses from the Project, the site does not pose a risk to the Project.

Wildfire Hazards

In California, responsibility for wildfire prevention and suppression is shared by federal, state and local agencies. Federal agencies are responsible for federal lands in Federal Responsibility Areas. The State of California has determined that some non-federal lands in unincorporated areas with watershed value are of statewide interest and have classified those lands as State Responsibility Areas (SRA), which are managed by CAL FIRE. All incorporated areas and other unincorporated lands are classified as Local Responsibility Areas (LRA). While nearly all of California is subject to some degree of wildfire hazard, there are specific features that make certain areas more hazardous. CAL FIRE is required by law to map areas of significant fire hazards based on fuels, terrain, weather and other relevant factors (Public Resources Code [PRC] 4201-4204 and California Government Code 51175-89). As described above, the primary factors that increase an area's susceptibility to fire hazards include slope, vegetation type and condition, and atmospheric conditions. CAL FIRE maps fire hazards based on zones, referred to as Fire Hazard Severity Zones. CAL FIRE maps three SRA zones: 1) Moderate Fire Hazard Severity Zones; 2) High Fire Hazard Severity Zones; and 3) Very High Fire Hazard Severity Zones. Only the Very High Fire Hazard Severity Zones are mapped for the LRA. Each of the zones influence how people construct buildings and protect property to reduce risk associated with wildland fires. Under state regulations, areas within very high fire hazard risk zones must comply with specific building and vegetation management requirements intended to reduce property damage and loss of life within these areas. According to LRA mapping, only a very small portion of land within Kings County, located in the far southwest corner, is designated as a Very High Fire Hazard Severity Zone.[4] Additionally, according to CAL FIRE, the nearest SRA mapped land is on the west side of State Route 33, approximately 30 miles to the southwest of the site at its nearest point.[5]

Airports

[4] California State Geoportal. California Fire Hazard Severity Zone Viewer. https://gis.data.ca.gov/datasets/789d5286736248f69c4515c04f58f414. Accessed June 2021.
[5] California Department of Forestry and Fire Protection. Fire Hazard Severity Zones Maps. Kings County. https://osfm.fire.ca.gov/media/6470/fhszs_map16.jpg. Accessed June 2021.

The nearest public airport is the Hanford Municipal Airport in Hanford, approximately eight miles east of the Project site. The nearest private airport is the Swanson Ranch NR 2 Airport, approximately 8.6 miles to the northwest. Swanson Ranch NR 1 Airport is approximately 10 miles to the northeast. The Lemoore Naval Air Station (NAS) Boundary is approximately nine miles to the west of the Project site.

Schools

Meadow Lane Elementary School is part of the Lemoore Union Elementary School District and has an enrollment of over 650 TK-6 students.[6] It is located approximately 0.15 miles south of the Project site.

King County Emergency Operations Plan (EOP)

The County of Kings Emergency Operations Plan (EOP) establishes an Emergency Management Organization and assigns functions and tasks consistent with California's Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS). It provides for the integration and coordination of planning efforts of multiple jurisdictions within Kings County. This plan was developed for each County department, local special districts with emergency services responsibilities, and in coordination with the cities in Kings County. The content is based upon guidance approved and provided by the California Governor's Office of Emergency Services (Cal OES) and the Federal Emergency Management Agency (FEMA). The intent of the EOP is to provide direction on how to respond to an emergency from the onset, through an extended response, and into the recovery process. Once adopted, this plan is an extension of the California Emergency Plan. It will be reviewed and tested periodically and revised as necessary to meet changing conditions.[7]

The County of Kings Emergency Operations Plan (EOP) addresses the County's planned response to extraordinary emergency situations associated with natural disasters, technological incidents and national security emergencies in or affecting the County of Kings. This plan does not apply to normal day-to-day emergencies or the established departmental procedures used to cope with such emergencies. Rather, this plan focuses on operational concepts and would be

[6] Meadow Lane Elementary, About. https://www.luesd.k12.ca.us/o/ml/page/our-school. Accessed June 2021.

[7] County of Kings Office of Emergency Management, Emergency Operations Plan, 2015. Page 3. https://www.countyofkings.com/home/showpublisheddocument/15207/636165315566800000. Accessed June 2021.

implemented relative to large-scale disasters, which can pose major threats to life, property and the environment requiring unusual emergency responses.[8]

*Standardized Emergency Management System (SEMS)*

The standardized emergency management system (SEMS) is a structure for coordination between the government and local emergency response organizations. It provides and facilitates the flow of emergency information and resources within and between the organizational levels of field response, local government, operational areas, regions and state management. SEMS facilitates priority setting, integrated coordination, effective flow of resources and information between all stakeholders. SEMS incorporates the use of the Incidental Command System (ICS), Master Mutual Aid Agreement (MMAA), Operational Area (OA) concept and multi-agency and interagency coordination. State agencies and local government units are to use SEMS in order to become eligible for reimbursement costs led by the state's disaster assistance program.

## Regulatory Setting

Federal Regulations

*Toxic Substances Control Act*

Established in 1976 and amended on December 31, 2002, the Toxic Substances Control Act (TSCA) (15 United States Code [USC] Section 2601-2692) grants the EPA power to require proper reporting, record-keeping, and testing requirements related to chemical substances and/or mixtures. Specifically, the TSCA addresses the production, importation, use, and disposal of specific chemicals, including polychlorinated biphenyls (PCBs), asbestos, radon, and lead-based paints (LBP). The TSCA establishes the EPA's authority to require the notification of the use of chemicals, require testing, maintain a TSCA inventory, and require those importing chemicals under Sections 12(b) and 13 to comply with certification and/or other reporting requirements. This federal legislation also phased out the use of asbestos-containing materials in new building materials and sets requirements for the use, handling, and disposal of asbestos-containing materials. Disposal standards for lead-based paint wastes are also detailed in the TSCA.

*The Emergency Planning and Community Right-To-Know Act*

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[8] Ibid. Page 7.

The Emergency Planning and Community Right-to-Know Act (also known as Title III of the Federal Superfund Amendments and Reauthorization Act, or "SARA III") (42 United States Code 11001 et seq.), was established by the EPA to allow for emergency planning at the State and local level regarding chemical emergencies, to provide notification of emergency release of chemicals, and to address community right-to-know regarding hazardous and toxic chemicals. SARA III was designed to increase community access and knowledge about chemical hazards as well as facilitate the creation and implementation of State/Native American tribe emergency response commissions, responsible for coordinating certain emergency response activities and for appointing local emergency planning committees (LEPCs). Section 1910.1200(c) Title 29 of the CFR defines "chemicals or hazardous materials" for the purposes of SARA III.

*Hazardous Materials Transportation Act*

The Hazardous Materials Transportation Act of 1975 (HMTA) as amended, is the major federal transportation-related statute affecting the transportation of hazardous material in commerce. The objective of the HMTA according to the policy stated by Congress is "... to improve the regulatory and enforcement authority of the Secretary of Transportation to protect the Nation adequately against risks to life and property which are inherent in the transportation of hazardous materials in commerce." The HMTA empowers the Secretary of Transportation to designate as hazardous material any "particular quantity or form" of a material that "may pose an unreasonable risk to health and safety or property."

Regulations apply to "… any person who transports, or causes to be transported or shipped, a hazardous material; or who manufactures, fabricates, marks, maintains, reconditions, repairs, or tests a package or container which is represented, marked, certified, or sold by such person for use in the transportation in commerce of certain hazardous materials."[9]

*Superfund*

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), commonly referred to as "Superfund", was enacted on December 11, 1980. The purpose of CERCLA was to provide authorities with the ability to respond to uncontrolled releases of hazardous substances from inactive hazardous waste sites that endanger public health and the environment. CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at such sites, and established a trust fund to provide for cleanup when no responsible party could be

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[9] United States Department of Labor. Occupational Safety and Health Administration. Transporting Hazardous Materials. https://www.osha.gov/SLTC/trucking_industry/transportinghazardousmaterials.html. Accessed June 2021.

identified. Additionally, CERCLA provided for the revision and republishing of the National Contingency Plan (NCP) that provides the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The NCP also provides for the National Priorities List, a list of national priorities among releases or threatened releases throughout the United States for the purpose of taking remedial action.

Superfund Amendments and Reauthorization Act SARA amended CERCLA on October 17, 1986. This amendment increased the size of the Hazardous Response Trust Fund to $8.5 billion, expanded EPA's response authority, strengthened enforcement activities at Superfund sites; and broadened the application of the law to include federal facilities. In addition, new provisions were added to the law that dealt with emergency planning and community right to know. SARA also required EPA to revise the Hazard Ranking System to ensure that the system accurately assesses the relative degree of risk to human health and the environment posed by sites and facilities subject to review for listing on the National Priorities List.

*Federal Emergency Management Act (FEMA)*

The National Flood Insurance Act (1968) makes available federally subsidized flood insurance to owners of flood-prone properties. To facilitate identifying areas with flood potential, Federal Emergency Management Agency (FEMA) has developed Flood Insurance Rate Maps (FIRM) that can be used for planning purposes.

*Resource Conservation and Recovery Act (RCRA)*

The Resource Conservation and Recovery Act (RCRA) provides the EPA with the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. The Federal Hazardous and Solid Waste Amendments (HSWA) are the 1984 amendments to RCRA that focus on waste minimization and phasing out land disposal of hazardous waste as well as corrective action for releases. Some of the other mandates of this law include increased enforcement authority for EPA, more stringent hazardous waste management standards, and a comprehensive underground storage tank program.

<u>State of California Regulations</u>

*California Environmental Protection Agency (Cal/EPA) Department of Toxic Substance Control (DTSC)*

Cal/EPA has regulatory responsibility under Title 22 of the California Code of Regulations (CCR)

for administration of the state and federal Superfund programs for the management and cleanup of hazardous materials. The DTSC is responsible for regulating hazardous waste facilities and overseeing the cleanup of hazardous waste sites in California. The Hazardous Waste Management Program (HWMP) regulates hazardous waste through its permitting, enforcement and Unified Program activities. HWMP maintains the EPA authorization to implement the RCRA program in California, and develops regulations, policies, guidance and technical assistance/ training to assure the safe storage, treatment, transportation and disposal of hazardous wastes. The State Regulatory Programs Division of DTSC oversees the technical implementation of the state's Unified Program, which is a consolidation of six environmental programs at the local level and conducts triennial reviews of Unified Program agencies to ensure that their programs are consistent statewide and conform to standards.

*Hazardous Substance Account Act (1984), California Health and Safety Code Section 25300 ET SEQ (HSAA)*

This act, known as the California Superfund, has three purposes: 1) to respond to releases of hazardous substances; 2) to compensate for damages caused by such releases; and 3) to pay the state's 10 percent share in CERCLA cleanups. Contaminated sites that fail to score above a certain threshold level in the EPA's ranking system may be placed on the California Superfund list of hazardous wastes requiring cleanup.

*California Code of Regulations*

Title 3 of the CCR pertains to the application of pesticides and related chemicals. Parties applying regulated substances must continuously evaluate application equipment, the weather, the treated lands and all surrounding properties. Title 3 prohibits any application that would:

- Contaminate persons not involved in the application
- Damage non---target crops or animals or any other public or private property
- Contaminate public or private property or create health hazards on said property

Title 8 of the CCR establishes California Occupational Safety and Health Administration (Cal OSHA) requirements related to public and worker protection. Topics addressed in Title 8 include materials exposure limits, equipment requirements, protective clothing, hazardous materials, and accident prevention. Construction safety and exposure standards for lead and asbestos are set forth in Title 8.

Title 14 of the CCR establishes minimum standards for solid waste handling and disposal.

Title 17 of the CCR establishes regulations relating to the use and disturbance of materials containing naturally occurring asbestos.

Title 19 of the CCR establishes a variety of emergency fire response, fire prevention, and construction and construction materials standards.

Title 22 of the CCR sets forth definitions of hazardous waste and special waste. The section also identifies hazardous waste criteria and establishes regulations pertaining to the storage, transport, and disposal of hazardous waste.

Title 26 of the CCR is a medley of State regulations pertaining to hazardous materials and waste that are presented in other regulatory sections. Title 26 mandates specific management criteria related to hazardous materials identification, packaging, and disposal. In addition, Title 26 establishes requirements for hazardous materials transport, containment, treatment, and disposal. Finally, staff training standards are set forth in Title 26.

Title 27 of the CCR sets forth a variety of regulations relating to the construction, operation and maintenance of the State's landfills. The title establishes a landfill classification system and categories of waste. Each class of landfill is constructed to contain specific types of waste (household, inert, special, and hazardous).

*California Fire Code*

The California Fire Code (CFC) is Part 9 of Title 24, California Code of Regulations, also referred to as the California Building Standards Code. The CFC incorporates the 2009 International Fire Code of the International Code Council with necessary California amendments. The purpose of the CFC is to establish the minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety and general welfare from the hazards of fire, explosion or dangerous conditions in new and existing buildings, structures and premises, and to provide safety and assistance to fire fighters and emergency responders during emergency operations.

*California Health and Safety Code*

Division 11 of the Health and Safety Code establishes regulations related to a variety of explosive substances and devices, including high explosives and fireworks. Section 12000 et seq. establishes regulations related to explosives and explosive devices, including permitting, handling, storage, and transport (in quantities greater than 1,000 pounds).

Division 12 establishes requirements for buildings used by the public, including essential services

buildings, earthquake hazard mitigation technologies, school buildings, and postsecondary buildings.

Division 20 of the Health and Safety Code establishes DTSC authority and sets forth hazardous waste and underground storage tank regulations. In addition, the division creates a State superfund framework that mirrors the Federal program.

Division 26 of the Health and Safety Code establishes California Air Resources Board (CARB) authority. The division designates CARB as the air pollution control agency per Federal regulations and charges the Board with meeting Clean Air Act requirements.

*California Health and Safety Code and UBC Section 13000 et seq.*

State fire regulations are set forth in §13000 *et seq*. of the California Health and Safety Code, which is divided into "Fires and Fire Protection" and "Buildings Used by the Public." The regulations provide for the enforcement of the UBC and mandate the abatement of fire hazards. The code establishes broadly applicable regulations, such as standards for buildings and fire protection devices, in addition to regulations for specific land uses, such as childcare facilities and high-rise structures.

*California Vehicle Code §31600 (Transportation of Explosives)*

Establishes requirements related to the transportation of explosives in quantities greater than 1,000 pounds, including licensing and route identification.

*Cal/EPA Cortese List*

The provisions in Government Code Section 65962.5 are commonly referred to as the "Cortese List" (after the Legislator who authored the legislation that enacted it). The list, or a site's presence on the list, has bearing on the local permitting process as well as on compliance with the California Environmental Quality Act (CEQA). The Cortese List identifies the following:

- Hazardous Waste and Substance Sites
- Cease and desist order Sites
- Waste Constituents above Hazardous Waste Levels outside the Waste Management Unit Sites
- Leaking Underground Tank (LUST) Cleanup Sites
- Other Cleanup Sites
- Land Disposal Sites

- Military Sites
- WDR Sites
- Permitted Underground Storage Tank (UST) Facilities Sites
- Monitoring Wells Sites
- DTSC Cleanup Sites
- DTSC Hazardous Waste Permit Sites

Local Regulations

*City of Lemoore General Plan, 2030*

The following lists goals and policies from the Safety and Noise Chapter of the City of Lemoore 2030 General Plan pertaining to hazards and hazardous materials that are applicable to the proposed Project.

| | |
|---|---|
| Goal SN-G-3 | Protect Lemoore's residents and businesses from potential wildfire hazards. |
| Policy SN-I-13 | Ensure Fire Department personnel are trained in wildfire prevention, response and evacuation procedures. |
| Policy SN-I-15 | Enforce the Uniform Fire Code through the approval of construction plans and final occupancy permits. |
| Goal SN-G-4 | Protect Lemoore's ecology and residents from harm resulting from the improper production, use, storage, disposal, or transportation of hazardous materials. |
| Policy SN-I-21 | Promote the reduction, recycling and safe disposal of household and business hazardous wastes through public education and awareness.<br>*The City will: 1) Educate the public on the types of household and business hazardous wastes and their proper disposal methods, 2) Provide information on the Kings Waste and Recycling Authority collection programs, including drop-off points and collection dates, and 3) Encourage citizen reporting of unlawful dumping activity. The City currently handles e-waste and battery and oil recycling.* |

*Kings County Environmental Health Services*

The Kings County Environmental Health Department implements the Hazardous Waste Program throughout Kings County. The purpose of this program is to ensure that all hazardous waste generated in Kings County businesses are properly handled, recycled, treated, stored and disposed. Environmental Health staff inspects facilities that generate hazardous waste, investigates reports of illegal hazardous waste disposal, and responds to emergency spills of hazardous chemicals. Environmental Health staff also participates in public education programs to inform industries and residents about the laws and regulations relating to the safe disposal of hazardous waste.

Facilities that store, use or handle hazardous materials above reportable amounts are required to prepare and file a Hazardous Materials Business Plan for the safe storage and use of chemicals. In the event of an emergency, firefighters, health officials, planners, public safety officers, health care providers and others rely on the Business Plan. Implementation of the Business Plan should prevent or reduce damage to the health and safety of people and the environment when a hazardous material is released.

*San Joaquin Valley Air Pollution Control District*

The San Joaquin Valley Air District (SJVAPCD) is a public health agency whose mission is to improve the health and quality of life for all Valley residents through efficient, effective and entrepreneurial air quality-management strategies. SJVAPCD's ten core values include: protection of public health; active and effective air pollution control efforts with minimal disruption to the Valley's economic prosperity; outstanding customer service; ingenuity and innovation; accountability to the public; open and transparent public process; recognition of the uniqueness of the Valley; continuous improvement; effective and efficient use of public funds; and respect for the opinions and interests of all Valley residents.[10] To achieve these core values the SJVAPCD has adopted air quality plans pursuant to the California CAA and a comprehensive list of rules to limit air quality impacts. The air plans currently in effect in the SJVAB and specific rules that apply to the proposed Project are listed and described further below.

The SJVAPCD is responsible for controlling emissions primarily from stationary sources. The SJVAPCD, in coordination with the eight countywide transportation agencies, is also responsible for developing, updating, and implementing air quality attainment plans for

[10] San Joaquin Valley Air Pollution Control District. About the District. https://www.valleyair.org/General_info/aboutdist.htm#Mission. Accessed June 2021.

the SJVAB. The SJVAPCD also regulates asbestos demolition and other hazardous materials handling.

*Certified Unified Program Agency (CUPA)*

The California Environmental Protection Agency designates specific local agencies as Certified Unified Program Agencies (CUPA), typically at the county level. In Kings County, the Environmental Health Services Division is responsible for the County's Certified Unified Program Agency (CUPA) programs. Each designated CUPA is responsible for the implementation of six statewide programs within its jurisdiction. These programs include:

- Underground storage of hazardous substances (USTs)
- Hazardous Materials Business Plan (HMP) requirements
- Hazardous Waste Generator requirements
- California Accidental Release Prevention (Cal---ARP) program
- Uniform Fire Code hazardous materials management plan
- Above Ground Storage Tanks (Spill Prevention Control and Countermeasures Plan only)

Implementation of these programs involves:

- Permitting and inspection of regulated facilities
- Providing educational guidance and notice of changing requirements stipulated in State or Federal laws and regulations
- Investigations of complaints regarding spills or unauthorized releases
- Administrative enforcement actions levied against facilities that have violated applicable laws and regulations

## Thresholds of Significance

The thresholds of significance for this section are established by the CEQA Checklist Item.

- Create a significant hazard through transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials?
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

- o Emit hazardous emissions within one-quarter mile of an existing or proposed school?
- o Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment?
- o Located within an airport land use plan?
- o Interfere with an adopted emergency response plan or emergency evacuation plan?
- o Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildland?

The Lead Agency determined in the Notice of Preparation/Initial Study (NOP/IS), located in Appendix A of this EIR, that the proposed Project would not result in significant impacts to some of these environmental issue areas, and that no further analysis would be required in the EIR. Thus, the following issue areas are scoped out of further analysis in this EIR:

> Implementation of the Project would generate vectors (flies, mosquitoes, rodents, etc.) or have a component that includes agricultural waste? Specifically, would the project exceed the following qualitative threshold:
>
> The presence of domestic flies, mosquitoes, cockroaches, rodents, and/or any other vectors associated with the project is significant when the applicable enforcement agency determines that any of the vectors:
>
> i. Occur as immature stages and adults in numbers considerably in excess of those found in the surrounding environment; and
> ii. Are associated with design, layout, and management of project operations; and
> iii. Disseminate widely from the property; and
> iv. Cause detrimental effects on the public health or well-being of the majority of the surrounding population.

## Impacts and Mitigation Measures

**Impact 3.8-1:** *Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*

**Less Than Significant Impact With Mitigation.** This impact is associated with hazards caused by the routine transport, use, or disposal of hazardous materials or through reasonably

foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

*Construction*

Proposed Project construction activities may involve the use and transport of hazardous materials. These materials may include fuels, oils, mechanical fluids, and other chemicals used during construction. Transportation, storage, use, and disposal of hazardous materials during construction activities would be required to comply with applicable federal, State, and local statutes and regulations. Compliance would ensure that human health and the environment are not exposed to hazardous materials. In addition, the Project would be required to comply with GEO-2, which ensures the Project adhere to the National Pollutant Discharge Elimination System (NPDES) permit program through the submission and implementation of a Stormwater Pollution Prevention Plan during construction activities to prevent contaminated runoff from leaving the Project site. Therefore, no significant impacts would occur during construction activities.

*Operation*

The operational phase of the proposed Project would occur after construction is completed and residents move in to occupy the structures on a day-to-day basis. The proposed Project includes land uses that are considered compatible with the surrounding uses, including single and multi-family residential uses, open space and natural drainage areas. None of these land uses routinely transport, use, or dispose of hazardous materials, or present a reasonably foreseeable release of hazardous materials, with the exception of common residential grade hazardous materials such as cleaners, paint, petroleum products, etc. The proposed Project would not create a significant hazard through the routine transport, use, or disposal of hazardous materials, nor would a significant hazard to the public or to the environment through the reasonably foreseeable upset and accidental conditions involving the likely release of hazardous materials into the environment occur.

Compliance with all federal, State and local regulations, and the City of Lemoore 2030 General Plan Implementing Policies SN-I-18 through SN-I-21 in the Safety and Noise Element would ensure that the Project would not cause an adverse effect on the environment with respect to the use, storage, or disposal of general household and commercial hazardous substances generated from future development or uses.

Therefore, the proposed Project will not create a significant hazard to the public or the environment and any impacts would be ***less than significant***.

**Mitigation Measures:**

Implementation of GEO-2.

**Impact 8.8-2:** *Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*

**Less Than Significant Impact With Mitigation.** As previously noted, a Phase I ESA was be prepared for the Project (See Appendix F). The results of the Phase I ESA are summarized as follows:

<u>Recognized Environmental Conditions</u>

A recognized environmental condition (REC) refers to the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: due to release to the environment; under conditions indicative of a release to the environment; or under conditions that pose a material threat of a future release to the environment.

<u>Controlled Recognized Environmental Conditions</u>

A controlled recognized environmental condition (CREC) refers to a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls. No CRECs were identified on the Project site.[11]

<u>Historical Recognized Environmental Conditions</u>

A historical recognized environmental condition (HREC) refers to a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use

[11] Ibid, page ii.

criteria established by a regulatory authority, without subjecting the property to any required controls. No HREC's were identified on the Project site.[12]

Environmental Issues

An environmental issue refers to environmental concerns identified by the Phase I ESA, which do not qualify as RECs; however, warrant further discussion. The following was identified during the course of the Phase I assessment:

- According to information obtained from the California Department of Conservation-Geologic Energy Management Division (CalGEM) Well Finder Database, a plugged and abandoned oil/gas well is located on the subject property. According to records available from the CalGEM Well Finder Database, the well, identified as Kreyenhagen 23-35, was drilled to a depth of 9,090 feet bgs on April 1, 1964 and was subsequently abandoned in on May 16, 1964. Review of the CalGEM records indicates that no oil or gas was encountered during the development of the well.

  The presence of the well on the subject property represent a potential for environmental concerns if 1) drill cuttings (muds) were stored on the subject property and 2) emission of methane and hydrogen sulfide gases are likely to impact the subject property. During oil well drilling of this type, it was common practice to deposit the drill cuttings in a large excavation near the location of the well, commonly referred to as drilling mud pits. The drill cuttings could potentially contain elevated levels of crude oil, petroleum hydrocarbons, and metals. An additional issue of concern with oil/gas wells is the potential emission of methane and hydrogen sulfide gases. These gases can migrate through geologic materials and/or through pathways such as old oil wells, fissures, and fractures in underlying geologic formations. The emitted gases have the potential to accumulate within building interiors or basements and adversely affect human health. However, due to the fact that the well did not produce oil or gas, potential emissions of methane and hydrogen sulfide gases are not expected to represent a significant environmental concern at this time. However, the likely presence of drilling mud pits in connection with the wells is considered a REC, as they represent conditions indicative of a release to the environment. It should be noted that the owner/operator of the well would likely be responsible for any future well abandonment activities, including any subsurface

[12] Ibid, page iii.

investigations and/or remediation related to potential contamination associated with drilling mud pits on the subject property. CalGEM may require the re-abandonment of the wells to current abandonment guidelines should future development on the subject property "prevent or impede access to the well for purposes of remedying a currently perceived future problem" (Appendix F).[13]

- During the February 27, 2019 site reconnaissance, a diesel-powered irrigation well connected to an approximately 10,000-gallon diesel AST was observed within the central portion of the subject property. The AST was observed to be placed over the unpaved ground surface absent secondary containment. A minor release of apparent diesel fuel was observed on the unpaved ground surface beneath a valve on the northern end of the AST. This area of staining was limited in extent and is considered a *de minimis* condition. Heavy oily surface staining from apparent lubrication oil was observed beneath and around the associated diesel engine on the southern side of the AST, and around the irrigation well pump. The vertical extent of the staining in these areas could not be determined. However, lubrication oil does not typically migrate easily in the subsurface and is not expected to have migrated to significant depth. Based on this information, the staining observed around the AST, engine, and well pump is considered a *de minimis* condition.

- The subject property has been utilized for agricultural purposes since at least 1950. There is a potential that agricultural related chemicals such as pesticides, herbicides, and fertilizers, may have been used and stored on-site. Agricultural chemicals in use today are commonly selected using a licensed pest control advisor and are reported to the Agricultural Commissioner. It is unknown if environmentally persistent pesticides and/or herbicides were historically applied to the crops grown on the subject property. However, there is a low potential for soil contamination at concentrations in excess of regulatory thresholds as a result of the past use of persistent pesticides/herbicides from normal crop application. Furthermore, no specific areas of concern for agricultural chemical use have been identified during the course of this assessment. Based on these factors, the previous

[13] Phase I ESA (March 2019), *Partner Engineering and Science, Inc.*, page ii.

agricultural use of the subject property is not expected to represent a significant environmental concern at this time.[14]

After implementation of Mitigation Measure HAZ-1 through HAZ-3, the Project's impacts would be reduced to a ***less than significant*** level.

**Mitigation Measures:**

**HAZ – 1** Prior to the issuance of grading or building permits, the Project proponent or contractor shall:

i. Provide a site plan that clearly delineates the locations of all known oil wells and the 10-foot no-build radius around each well. A copy of the map shall be submitted to the California Department of Conservation, Geologic Energy Management Division (CalGEM), and the City of Lemoore Community Development Department.

**HAZ – 2** In the event that other abandoned or unrecorded wells are uncovered or damaged during excavation or grading activities, all work shall cease in the vicinity of the well, and the California Department of Conservation, Geologic Energy Management Division (CalGEM), shall be contacted for requirements and approval; copies of said approvals shall be submitted to the City of Lemoore Community Development Department CalGEM, may determine that remedial plugging operations may be required

HAZ-3 As a best management practice, prior to the issuance of grading permits, the areas of surface staining located near the diesel AST and engine shall be excavated, drummed, and removed from the subject property for proper off-site disposal. Additionally, secondary containment shall be provided for the diesel AST in order to prevent an accidental release from adversely impacting the subject property. Evidence of compliance shall be submitted to the City of Lemoore Community Development Department.

[14] Phase I ESA (March 2019), *Partner Engineering and Science, Inc.*, page iii.

**Impact 3.8-3**: *Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?*

**Less Than Significant Impact.** Meadow Lane Elementary School is within ¼ mile of the proposed Project site.

As noted in Chapter 3.2 *Air Quality*, Project construction would involve the use of diesel-fueled vehicles and equipment that emit DPM, which is considered a TAC. The SJVAPCD's 2015 GAMAQI does not currently recommend analysis of TAC emissions from Project construction activities, but instead focuses on projects with operational emissions that would expose sensitive receptors over a typical lifetime of 70 years. Residential projects produce limited amounts of TAC emissions during operation and thus have not been subject to Project TAC analysis. Most emissions from construction activities occur during the grading and site preparation phases that occur over the first three months of construction of individual tracts and do not overlap with Project operations. The Project would not exceed SJVAPCD localized emission daily screening levels for any criteria pollutant. The Project is not a significant source of TAC emissions during construction or operation. Therefore, the Project would not result in significant impacts to sensitive receptors

Based on the proposed Project description of a residential development, it is not reasonably foreseeable that the proposed Project will cause a significant impact by emitting hazardous waste or bringing hazardous materials within one-quarter mile of an existing or proposed school. Residential developments typically do not generate, store, or dispose of significant quantities of hazardous materials. Such uses also do not normally involve dangerous activities that could expose persons onsite or in the surrounding areas to large quantities of hazardous materials. See the responses to a) and b) above regarding hazardous material handling. Any impacts would be ***less than significant.***

**Mitigation Measures:** None are required.

**Impact 3.8-4:** *Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*

**Less Than Significant Impact.** The proposed Project site is not located on a list of hazardous

materials sites compiled pursuant to Government Code Section 65962.5 (Geotracker[15] and DTSC Envirostor[16] databases). The nearest Department of Toxic Substances Control listed site is the Gateway Plaza Cleanup Site (Geotracker identified the hazardous substance at this location as "Dichloroethene"). The site address is 1104-1290 North Lemoore Avenue and is approximately one-half mile south of the Project site. The site is listed as Open – Site Assessment as of 2/5/2016. There are no hazardous materials sites that impact the Project and therefore there is ***a less than significant impact***.

**Mitigation Measures:** None are required.

**Impact 3.8-5:** *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?*

**Less Than Significant Impact.** The nearest public airport is the Hanford Municipal Airport in Hanford, approximately eight miles east of the Project site. The nearest private airport is the Swanson Ranch NR 2 Airport, approximately 8.6 miles to the northwest. Swanson Ranch NR 1 Airport is approximately 10 miles to the northeast. There are no public or private airport land use plans that are applicable to the Project.

The Lemoore Naval Air Station (NAS) Boundary is approximately nine miles to the west of the Project site. According to the *NAS Lemoore Joint Land Use Study* (2011), development within three miles of the NAS boundary is restricted. As shown in Figure 3-2 of the Study, the Project site is outside of the three-mile buffer area and therefore, there are no Project-related development restrictions pertaining to the NAS. Therefore, there is a ***less than significant impact.***

**Mitigation Measures:** None are required.

**Impact 3.8-6:** *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

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[15] California State Water Resources Control Board GeoTracker. https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=tehachapi%2C+ca. Accessed June 2020.
[16] California Department of Toxic Substances Control. Envirostor. https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=Lemoore+california. Accessed June 2020.

**Less Than Significant Impact.** The City of Lemoore's Emergency Operations Plan (EOP) provides guidance to City staff in the event of extraordinary emergency situation associated with natural disaster and technological incidents. The EOP concentrates on operation concepts and response procedures relative to large-scale disasters. In the event of a county-wide disaster, the City is to assume its role assigned in the Kings County EOP.[17] The proposed Project would also comply with the appropriate local and State requirements regarding emergency response plans and access. The Project would not inhibit the ability of local roadways to continue to accommodate emergency response and evacuation activities and as such, the Project would not interfere with the City's adopted emergency response plan. Any impacts are ***less than significant***.

**Mitigation Measures:** None are required.

**Impact 3.8-7:** *Expose people or structures either directly or indirectly to a significant risk of loss, injury or death involving wildland fires?*

**Less Than Significant Impact.** Wildfire hazard data for the City of Lemoore is provided by the California Department of Forestry and Fire Protection. The majority of the City is considered to have either little or no threat or a moderate threat of wildfire.[18] According to the City of Lemoore 2030 General Plan Hazards and Safety Services Figure 8-2[19], neither the proposed Project nor its vicinity have a high wildfire threat. In addition, and as described in the Environmental Setting section, only a very small portion of land within Kings County (located in the far southwest corner of the County) is designated as a Very High Fire Hazard Severity Zone by the Local Responsibilities Area mapping program.[20] Additionally, according to CAL FIRE, the nearest State Responsibility Area mapped land is on the west side of State Route 33, approximately 30 miles to the southwest of the Project site at its nearest point.[21]

There are no other factors of the proposed Project or the surrounding area that would exacerbate wildfire or the uncontrolled spread of a wildfire. For these reasons, the impact is considered ***less than significant***.

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[17] City of Lemoore 2030 General Plan. Safety and Noise Element. May 2008. https://lemoore.com/wp-content/uploads/2018/01/lemoore_gp_ch8_safety_noise_3_20_2012.pdf. Page 8-13. Accessed June 2020.
[18] Ibid. Page 8-7.
[19] Ibid. Page 8-2.
[20] California State Geoportal. California Fire Hazard Severity Zone Viewer. https://gis.data.ca.gov/datasets/789d5286736248f69c4515c04f58f414. Accessed June 2021.
[21] California Department of Forestry and Fire Protection. Fire Hazard Severity Zones Maps. Kings County. https://osfm.fire.ca.gov/media/6470/fhszs_map16.jpg. Accessed June 2021.

**Mitigation Measures:** None are required.

### Cumulative Impacts

**Less Than Cumulatively Considerable with Mitigation.** The scope for considering cumulative impacts to hazards and hazardous materials is generally site-specific rather than cumulative in nature because each project site has different hazardous considerations that would be subject to review. Project construction may involve the transportation, use, and/or disposal of hazardous materials, which may involve the use of equipment that contains hazardous materials (e.g., solvents and fuels, diesel-fueled equipment), or the transportation of excavated soil and/or groundwater containing contaminants from areas that are identified as being contaminated.

With respect to impacts related to the creation of a hazard through upset or accident conditions involving the release of a hazardous material, the following could occur during Project construction and operation: site grading that would generate dust, inadvertently damage the existing abandoned wells, and unknown wells could be discovered. However, conformance with existing State and City regulations, as well as project safety design features, and implementation of mitigation measures GEO-2, HAZ-1 through HAZ-3, identified above, would render this impact less than significant. This impact does not have the potential to contribute to cumulative hazards associated with other projects. The impacts would be localized, occurring only in the immediate vicinity of the project sites, and the implementation of appropriate safety measures during construction of the proposed Project would reduce the impact to a level that would not contribute to cumulative effects.

Because the project is located within ¼ mile of an existing school, with implementation of GEO-2 and HAZ-1 through HAZ-3, it will not contribute to cumulative effects resulting from hazardous emissions or the handling of hazardous materials, substances, or waste. The project is not located on a listed hazardous materials site and accordingly would not contribute to cumulative impacts resulting from the creation of a significant hazard to the public due to its location.

Because of the Project's location in an area with adequate emergency response times and the absence of project features that would physically impair emergency response or evacuation, the Project would not contribute to cumulative impacts on an adopted emergency response plan or evacuation plan. Similarly, the Project would not contribute to cumulative wildland fire-related impacts due to its location in an area with low wildland fire risk. . Considering the protection granted by local, State and federal agencies and their requirements for the use of hazardous materials in the region, as discussed above, with implementation of GEO-2 and HAZ-1

through HAZ-3. the overall cumulative impact would be less than significant. As such, the proposed Project's incremental contribution to cumulative hazards and human health impacts would be ***less than cumulatively considerable with mitigation***.

# 3.9 Hydrology and Water Quality

This section of the DEIR identifies potential impacts of the proposed Project pertaining to hydrology, water supply and water quality. To assist in evaluation of this environmental impact, a Water Supply Assessment (Appendix G) was prepared.

## Environmental Setting

*Project Site*

As described in Section 2.1, the Project site is located immediately north of the City of Lemoore in Kings County, in an area dominated by rural agricultural land and homesteads, and the residential units associated with the City of Lemoore immediately to the south. The site is partially designated by the City of Lemoore General Plan for future residential uses and is currently zoned as Limited Agricultural-10 District (AL-10) by Kings County. Approximately one-third of the site (the southern one-third) is within the City's Sphere of Influence (SOI) while the remaining two-thirds are currently outside the SOI. The entire site is within the adopted Urban Development Boundary and proposed for annexation into the City limits of Lemoore.

Project site topography is relatively flat, varying in elevation from 212 to 230 feet above mean sea level, with the lowest elevation occurring along the northern boundary of the site and the highest elevation occurring along the most southeastern portion. The Project site is underlain by a mix of Nord complex and Whitewolf coarse sandy loam (Colibri, 2020). As of Summer 2021, the land is being farmed for alfalfa and utilizes on-site agricultural wells for irrigation. The site has been used to grow alfalfa for at least the last five years. Of the 155-acre site, approximately 154 acres are used for growing with approximately 1 acre used for dirt access roads. Alfalfa requires at least 4 acre-feet per year per acre in the San Joaquin Valley of California.[1] Based on 154 acres of alfalfa production, the site uses approximately 616 acre-feet (AF) of water per year (154 acres X 4 AFY = 616 AFY). If the proposed Project is approved and annexed into the City, the Project will tie into the City's existing water system.

*Local Groundwater Basin*

The groundwater subbasin underlying the City of Lemoore is the Tulare Lake Subbasin (Groundwater Basin No. 5-022.12). The Tulare Lake Subbasin is one of eight subbasins within the Tulare Lake Hydrologic Region that transport, filter, and store water. The major rivers in the

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[1] https://alfalfa.ucdavis.edu/irrigatedalfalfa/pdfs/ucalfalfa8287prodsystems_free.pdf, page 12 (accessed Oct. 2021).

Subbasin that provide most of the surface water runoff for the Region is the Kings River. The Tulare Lake Subbasin is a non-adjudicated basin, meaning there are no restrictions on groundwater pumping.

Of the 5.1 million acres of the San Joaquin Valley Basin, the Tulare Lake Subbasin has a surface area of approximately 524 thousand acres (818 square miles). The Tulare Lake Subbasin is bounded on the south by the Kings-Kern county line, on the west by the California Aqueduct, the eastern boundary of Westside Groundwater Subbasin, and Tertiary marine sediments of the Kettleman Hills. It is bounded on the north by the southern boundary of the Kings Groundwater Subbasin, and on the east by the westerly boundaries of the Kaweah and Tule Groundwater Subbasins. The southern half of the Tulare Lake Subbasin consists of lands in the former Tulare Lake bed in Kings County. The San Joaquin River Groundwater Basin is not an adjudicated groundwater basin.[2]

The Tulare Lake Subbasin Groundwater Sustainability Plan (Groundwater Sustainability Plan) (January 2020) provided historical information related to groundwater in the Subbasin. The Subbasin groundwater model and Department of Water Resources (DWR) estimates were used to calculate groundwater in storage for the principal aquifers within the Subbasin boundaries based on 2016 conditions. The unconfined aquifer has an average specific yield of 8.5% and an average saturated thickness of 451 feet over the 535,869 acres of the Subbasin. This yields an estimated 20.5 million AF of groundwater in storage in the unconfined aquifer. The confined aquifer has an estimated average specific yield of 4.91% and an average saturated thickness of 2,294 feet over the 535,869 acres of the Subbasin. This yields an estimated 60.4 million AF of groundwater in storage in the confined aquifer zone. Total estimated groundwater in storage as of 2016 is approximately 80.9 million AF, which is slightly less than the DWR estimate of 82.5 million AF.[3]

According to the Groundwater Sustainability Plan, the estimated groundwater in storage in the Subbasin above the base of fresh groundwater is roughly 82.5 million AF while groundwater use in the Subbasin is in overdraft by an average of roughly 0.07 million AF/Y. Although the reductions in groundwater storage will be addressed through the Groundwater Sustainability

[2] City of Lemoore 2015 UWMP, page 33.

[3] Tulare Lake Subbasin Groundwater Sustainability Plan (Jan. 2020), page 3-30.

Plan implementation period, the long-term regional overdraft could continue for many years without significant risk to the beneficial uses and users of groundwater in the Subbasin.[4]

The Groundwater Sustainability Plan also indicated that for the areas covered by the South Fork Kings Groundwater Sustainability Agency (includes the City of Lemoore), the average annual storage change for this area is estimated at a negative 37,840 AF.

## Regulatory Setting

Federal Agencies and Regulations

*Clean Water Act (CWA) and Associated Programs*

The Clean Water Act (CWA) is intended to restore and maintain the chemical, physical, and biological integrity of the nation's waters (33 CFR 1251). The regulations implementing the CWA protect waters of the U.S. including streams and wetlands (33 CFR 328.3). The CWA requires states to set standards to protect, maintain, and restore water quality by regulating point source and some non-point source discharges. Under Section 402 of the CWA, the National Pollutant Discharge Elimination System (NPDES) permit process was established to regulate these discharges.

Construction activities that are subject to this general permit include clearing, grading, stockpiling, and excavation that result in soil disturbances to at least one acre of the total land area. Construction activities that disturb less than one acre are still subject to this general permit if the activities are part of a large common plan of development or if significant water quality impairment would result. In California, the Construction General Permit, revised in September 2009, is implemented by the SWRCB.

*Section 401*

CWA Section 401 requires an evaluation of water quality when a proposed activity requiring a federal license or permit could result in a discharge to waters of the United States. In California, USEPA has delegated to SWRCB and the RWQCBs the authority to issue water quality certifications. Each RWQCB is responsible for implementing Section 401 in compliance with the CWA and that region's water quality control plan (also known as a Basin Plan). Applicants for a federal license or permit to

[4] Ibid, page 4-13.

conduct activities that might result in the discharge to waters of the United States must also obtain a Section 401 water quality certification to ensure that any such discharge would comply with the applicable provisions of the CWA.

*Section 404*

CWA Section 404 regulates the discharge of dredged and fill materials into waters of the U.S., which include all navigable waters, their tributaries, and some isolated waters, as well as some wetlands adjacent to the afore-mentioned waters (33 CFR Section 328.3). Areas typically not considered to be jurisdictional waters include non-tidal drainage and irrigation ditches excavated on dry land, artificially irrigated areas, artificial lakes or ponds used for irrigation or stock watering, small artificial waterbodies such as swimming pools, and water-filled depressions (33 CFR Part 328). Areas meeting the regulatory definition of waters of the U.S. are subject to the jurisdiction of USACE under the provisions of CWA Section 404. Construction activities involving placement of fill into jurisdictional waters of the U.S. are regulated by USACE through permit requirements. No USACE permit is effective in the absence of state water quality certification pursuant to Section 401 of the CWA.

*Federal Emergency Management Agency (FEMA)*

The National Flood Insurance Act (1968) makes available federally subsidized flood insurance to owners of flood-prone properties. To facilitate identifying areas with flood potential, Federal Emergency Management Agency (FEMA) has developed Flood Insurance Rate Maps (FIRM) that can be used for planning purposes.

<u>State of California Regulations</u>

*Department of Water Resources (DWR)*

DWR's major responsibilities include preparing and updating the California Water Plan to guide development and management of the State's water resources; planning, designing, constructing, operating, and maintaining the State Water Resources Development System; regulating dams; providing flood protection; assisting in emergency management to safeguard life and property; educating the public; and serving local water needs by providing technical assistance. In addition, DWR cooperates with local agencies on water resources investigations; supports watershed and river restoration programs; encourages water conservation; explores conjunctive use of ground and surface water facilities voluntary water transfers; and, when needed, operates a State drought water bank.

*State Water Resources Control Board*

The State Water Resources Control Board (SWRCB), located in Sacramento, is the agency with jurisdiction over water quality issues in the State of California. The SWRCB is governed by the Porter-Cologne Water Quality Act (Division 7 of the California Water Code), which establishes the legal framework for water quality control activities by the SWRCB. The intent of the Porter-Cologne Act is to regulate activities which may adversely affect the quality of waters of the State to attain the highest water quality which is reasonable, considering a full range of demands and values. The act authorizes the SWRCB to establish water quality principles and guidelines for long-range resource planning including groundwater and surface water management programs and control and use of recycled water. Much of the implementation of the SWRCB's responsibilities is delegated to nine Regional Water Quality Control Boards (RWQCBs). The proposed Project site is located within the jurisdiction of the Central Valley RWQCB.

*California Water Code*

The Federal CWA establishes certain guidelines for the states to follow in developing programs for the control of surface water pollution and for planning the development and use of water resources. Under certain circumstances, the CWA allows the federal Environmental Protection Agency (EPA) to withdraw the primary responsibility for these programs from states with inadequate implementation mechanisms.

California’s primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Division 7 of the California Water Code) (Porter-Cologne Act). The Porter-Cologne Act grants the SWRCB and each of the RWQCBs power to protect water quality, and is the primary vehicle for implementation of California’s responsibilities under the Federal CWA. The Porter-Cologne Act grants the SWRCB and the RWQCBs authority and responsibility to adopt plans and policies, to regulate discharges to surface and groundwater, to regulate waste disposal sites and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, or oil or petroleum product.

Each RWQCB must formulate and adopt a water quality control plan (Basin Plan) for its region. The regional plans must conform with the policies set forth in the Porter-Cologne Act and established by the State water policy adopted by the SWRCB. The Porter-Cologne Act also provides that a RWQCB may include within its regional plan water discharge prohibitions applicable to particular conditions, areas, or types of waste.

Water Code Section 13260 requires all dischargers of waste that may affect water quality in waters of the state to prepare and provide a water quality discharge report to the RWQCB. Section 13260a-c is as follows:

(a) Each of the following persons shall file with the appropriate regional board a report of the discharge, containing the information that may be required by the regional board:

(1) A person discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the state, other than into a community sewer system.

(2) A person who is a citizen, domiciliary, or political agency or entity of this state discharging waste, or proposing to discharge waste, outside the boundaries of the state in a manner that could affect the quality of the waters of the state within any region.

(3) A person operating, or proposing to construct, an injection well.

(b) No report of waste discharge need be filed pursuant to subdivision (a) if the requirement is waived pursuant to Section 13269.

(c) Each person subject to subdivision (a) shall file with the appropriate regional board a report of waste discharge relative to any material change or proposed change in the character, location, or volume of the discharge.

*Water Code section 10910 (SB 610)*

Water Code section 10910 (SB 610) requires that a lead agency obtain a water supply assessment from an applicable public water system for certain projects subject to the California Environmental Quality Act, which are defined as (a) a residential development of more than 500 dwelling units; (b) a shopping center or business employing more than 1,000 persons or having more than 500,000 square feet of floor space; (c) a commercial office building employing more than 1,000 persons or having more than 250,000 square feet; (d) a hotel or motel with more than 500 rooms; (e) an industrial or manufacturing establishment housing more than 1,000 persons or having more than 650,000 square feet or 40 acres; (f) a mixed use project containing any of the foregoing; or (g) any other project that would have a water demand at least equal to a 500 dwelling unit project. Refer to Impact Section 3.10-2 herein for the discussion pertaining to the Water Supply Assessment that was prepared for the Project.

*Regional Water Quality Board*

The Central Valley RWQCB administers the NPDES storm water-permitting program in the Central Valley region, including Lemoore. Construction activities on one acre or more are subject to the permitting requirements of the NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (General Construction Permit). The General Construction Permit requires the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The plan must include specifications for Best Management Practices (BMPs) that will be implemented during proposed construction to control degradation of surface water by preventing the potential erosion of sediments or discharge of pollutants from the construction area. The General Construction Permit program was established by the SWRCB and the Central Valley RWQCB for the specific purpose of reducing impacts to surface waters that may occur due to construction activities. BMPs have been established in the California Storm Water Best Management Practice Handbook (2003), and are recognized as effectively reducing degradation of surface waters to an acceptable level. Additionally, the SWPPP describes measures to prevent or control runoff degradation after construction is complete, and identifies a plan to inspect and maintain these facilities or project elements.

*Porter-Cologne Water Quality Control Act*

Under the Porter-Cologne Water Quality Control Act, waters of the state fall under the jurisdiction of the appropriate Regional Water Quality and Control Board (RWQCB). Under the act, the RWQCB must prepare and periodically update water quality control basin plans. Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control nonpoint and point sources of pollution to achieve and maintain these standards. Projects that affect wetlands or waters must meet waste discharge requirements of the RWQCB, which may be issued in addition to a water quality certification or waiver under CWA Section 401.

*Sustainable Groundwater Management Act*

In 2014, California enacted the Sustainable Groundwater Management Act (SGMA) (Water Code §10720 et seq.). SGMA requires that groundwater basins designated by the state Department of Water Resources (DWR) as high priority and/or critically overdrafted must be managed under a Groundwater Sustainability Plan (GSP) that avoids "undesirable results" as defined in the Act within 20 years from January 31, 2020. The GSP must be developed by a Groundwater Sustainability Agency (GSA) approved by the DWR. The WWD service area boundary largely overlaps with DWR-designated San Joaquin Valley groundwater subbasin 5.22-9, which is

commonly called the "Westside Subbasin." The DWR has designated the Westside Subbasin as high priority and critically overdrafted, and SGMA requires that a GSP be adopted by an approved GSA for the subbasin by January 31, 2020. The City of Lemoore is part of the South Fork Kings Groundwater Sustainability Agency.

Local Regulations

*City of Lemoore 2030 General Plan*

The following lists policies and implementing actions from the City of Lemoore General Plan pertaining to hydrology and water quality that are applicable to the proposed Project.

**GUIDING POLICIES**

PU-G-1 Maintain and enhance water resources to ensure that Lemoore has an adequate, affordable, water supply to sustain the City's quality of life and support existing and future development—without jeopardizing water supply for future generations.

PU-G-2 Conserve water through supply-side efficiencies and water conservation programs.

**IMPLEMENTING ACTIONS**

**Water Supply Management**

PU-I-1 Update the City's Urban Water Management Plan every five years and ensure its contents are consistent with the California Water Code and General Plan policies, including prioritization and identification of funding sources.

PU-I-2 Provide and maintain a system of water supply distribution facilities capable of meeting existing and future daily and peak demands, including fire flow requirements, in a timely and cost effective manner.

PU-I-3 Monitor the demands on the water system and, as necessary, manage development to mitigate impacts and/or facilitate improvements to the water supply and distribution systems.

PU-I-4 Continue to support the Laguna Irrigation District's ground water recharging (water banking) efforts, in consultation with the State Department of Water Resources and county water management authorities.

**Land Use/New Development**

PU-I-5 Require that necessary water supply infrastructure and storage facilities are in place concurrently with new development, and approve development plans only when a dependable and adequate water supply for the development is assured.

PU-I-6 Require water meters in all new development.

PU-I-7 Require all major new development projects with more than 200,000 square feet of floor area overall to have a water management plan, in accordance with State law:

- Large projects will be required to submit planting plans, irrigation plans, schedules, and water use estimates for City approval prior to issuance of building permits;
- Industrial projects will be required to submit water recycling plans and irrigation plans for proposed landscaping.

PU-I-8 Require water bubblers for street trees, separate from surface irrigation used for turf.

PU-I-9 Promote the use of evapotranspiration (ET) water systems in irrigating large parks and large landscaped areas.

ET water systems are "smart water systems" that can be programmed with data such as the type of soil, slope of landscape, type of vegetation, and daily weather conditions, so that they can automatically adjust irrigation schedules based on those conditions. The result is lower water bills and a healthier environment.

PU-I-10 Require that developers of agricultural land to be annexed to the City offer the water rights associated with this land to the City.

**New Water Sources**

PU-I-11 Revise regulations to allow the safe use of reclaimed water ("gray water") by homes and businesses where feasible. Examples of areas where "gray water" might be safely used include:

- Irrigation of parks and residential yards, and irrigation for farming;
- Cooling towers and HVAC systems in commercial or industrial buildings; and
- Water cisterns in flush toilets.

PU-I-12 Establish and implement a program of cooperative surface water use with local water purveyors and irrigation districts to retain surface water rights and supply following annexation and urban development so as to protect against aquifer overdrafts and water quality degradation.

PU-I-13 Promote the continued use of surface water for agriculture to reduce groundwater table reductions.

PU-I-14 Drill additional wells within the City when other water supply alternatives are not feasible and demand warrants their development.

LU-I-7 Require new development to pay its fair share of the costs of public infrastructure, services and transportation facilities, in accordance with State law.

## Thresholds of Significance

The thresholds of significance for this section are established by the CEQA Checklist Item.

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

  i. result in substantial erosion or siltation on- or offsite;

  ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

  iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

  iv. impede or redirect flood flows?

- In flood hazard, tsunami or seiche zones, risk release of pollutants due to project inundation?
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

## Impacts and Mitigation Measures

**Impact 3.9-1:** *Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?*

**Less Than Significant With Mitigation.**

The Project has the potential to impact water quality standards and/or waste discharge requirements during construction (temporary impacts) and operation (polluted stormwater runoff due to an increase in impervious surfaces).

*Construction*

Grading, excavation, removal of vegetation cover, and loading activities associated with construction activities could temporarily increase runoff, erosion, and sedimentation. Construction activities also could result in soil compaction and wind erosion effects that could adversely affect soils and reduce the revegetation potential at construction sites and staging areas.

Three general sources of potential short-term construction-related stormwater pollution associated with the proposed Project are: 1) the handling, storage, and disposal of construction materials containing pollutants; 2) the maintenance and operation of construction equipment; and 3) earth moving activities which, when not controlled, may generate soil erosion and transportation, via storm runoff or mechanical equipment. Generally, routine safety precautions for handling and storing construction materials may effectively mitigate the potential pollution of stormwater by these materials. These same types of common sense, "good housekeeping" procedures can be extended to non-hazardous stormwater pollutants such as sawdust and other solid wastes.

Poorly maintained vehicles and heavy equipment leaking fuel, oil, antifreeze, or other fluids on the construction site are also common sources of stormwater pollution and soil contamination. In addition, grading activities can greatly increase erosion processes. Two general strategies are recommended to prevent construction silt from entering local storm drains. First, erosion control

procedures should be implemented for those areas that must be exposed. Secondly, the area should be secured to control offsite migration of pollutants.

The Project site is located within the Central Valley RWQCB and is subject to the applicable requirements of the Basin Plan administered by the RWQCB in accordance with the Porter-Cologne Water Quality Control Act..

In accordance with the NPDES Stormwater Program, and as described in Section 3.6 - Geology and Soils, Mitigation Measure GEO – 2 ensures the Project will comply with existing regulatory requirements to prepare a SWPPP designed to control erosion and the loss of topsoil to the extent practicable using BMPs that the RWQCB has deemed effective in controlling erosion, sedimentation, runoff during construction activities. The specific controls are subject to the review and approval by the RWQCB and are an existing regulatory requirement. Implementation of Mitigation Measure GEO - 2 would ensure that the proposed Project would have a less than significant impact.

As noted in Section 3.3 – Biological Resources, the Project requires an abandonment and relocation of an irrigation canal.  Therefore, Mitigation Measure BIO-7 requires a delineation of the drainage and determination of jurisdiction prior to the issuance of grading permits. If the drainage is jurisdictional, additional permitting with the USACE, RWQCB, and/or CDFW is also required prior to construction activities to maintain adequate water quality standards.  With implementation of BIO-7, impacts of the Project to water quality would be less than significant

*Operation*

The long-term operations of the proposed Project could result in long-term impacts to surface water quality from urban stormwater runoff. The proposed Project would result in new impervious areas associated with site improvements, including new asphalt, concrete and the proposed structures on site. Urban runoff typically contains oils, grease, fuel, antifreeze, byproducts of combustion (such as lead, cadmium, nickel, and other metals) and other household pollutants.  Precipitation early in the rain season displaces these pollutants into storm water resulting in high pollutant concentrations in initial wet weather runoff.  This initial runoff with peak pollutant levels can be referred to as the "first flush" of storm events.

The proposed Project would install storm water drainage facilities (e.g. storm drainage mechanisms and storm water pipes) that would be in compliance with the City of Lemoore Development Standards. The site has been designed with a 4.39-acre storm drain basin located at the southwest corner of the development. Stormwater will be collected from the Project to this detention basin and then discharged into the City's existing storm drain system through a

pipeline that will be constructed by the Project. The system has been designed so that storm water flow rates do not exceed the City's capacity.

In accordance with the City's storm water management regulations and NPDES Stormwater Program (General Stormwater Permit), BMPs would be implemented to reduce the amount of pollution in stormwater discharged from the Project site. The management of water quality through the requirement to obtain a General Stormwater Permit and implement appropriate BMPs would ensure that water quality does not degrade to levels that would violate water quality standards. These are existing regulatory requirements.

In addition, the Project will generate typical wastewater (sewer) associated with residential developments and will connect to the City's sewer system. The Project site would be located within the service area of the City of Lemoore Wastewater Treatment Facility (WWTF). Since the WWTF is considered a publicly owned treatment facility, operational discharge flows treated at the WWTF would be required to comply with applicable water discharge requirements issued by the Regional Water Quality Control Board (RWQCB). Compliance with conditions or permit requirements established by the City as well as water discharge requirements outlined by the RWQCB would ensure that wastewater discharges coming from the proposed Project site and treated by the WWTP system would not exceed applicable Central RWQCB wastewater treatment requirements. The Project will not result in a violation of any water quality standards or waste discharge requirements. Therefore, with mitigation, impacts result in a less than significant impact.

**Mitigation Measures:**

Implement MM BIO-7 and MM GEO-2.

**Impact 3.9-2:** *Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?*

**Less Than Significant With Mitigation.**

The proposed Project would be annexed into the City and add demand for water to the City of Lemoore water system, which is reliant on groundwater to serve its customers. The information herein is based on the Water Supply Assessment that was prepared for the Project (Appendix G).

*Assumptions*

Project water demand is estimated using information from the City's adopted 2015 Urban Water Management Plan (2015 UWMP), as well as from a more recent water use information from the City's Water Master Plan (2020 WMP) that was adopted by the City in August 2021. Project water demand is calculated on the following assumptions:

- Residential: The Project is proposing 825 residential units.
- Public Parks / Public Areas / Landscaping: The Project includes approximately 9.54 acres of park space distributed among four parks and a trail throughout the proposed development. To be conservative, it is assumed that approximately eight acres of the total park space acreage will have irrigated landscaping and will require approximately 3.5 acre-feet per year (afy), for a total of 28 afy. This figure is based on information pertaining to water requirements for irrigated urban landscaping in the region.[5]
- Per Capita Water Use: The City's water usage has ranged from a high of 228 gallons per capita per day (GPCD) in 2004 to 124 GPCD in 2016.[6] The reduction in per capita demand can be attributed to increased conservation by the City's residents associated with recent drought conditions. The City's 2015 UWMP identifies a target of 175 GPCD for Year 2020.[7] However, based on more recent information from the City's 2020 WMP, a demand of 171 GPCD was used to project future flow projections in the City.[8] This value is inclusive of water used for outdoor landscaping and was chosen because it is based on more recent historical usage in the City. .
- Household Size: According to the City's General Plan, the City averages 3.1 persons per household. Although some of the housing products / floor plans proposed by the Project would likely result in fewer than 3.1 persons per residence, the figure is being used to conservatively estimate Project water demand.
- Construction Water Use (Temporary): The Project will require preparation of a Dust Control Plan that must be approved by the San Joaquin Valley Air Pollution Control District. The Dust Control Plan will include specific information including the amount of

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5 https://www.ppic.org/publication/groundwater-and-urban-growth-in-the-san-joaquin-valley/ (accessed Oct. 2021).

6 City of Lemoore – Water Master Plan (Feb. 2020), page 103.

7 City of Lemoore – Urban Water Management Plan (2015), page 31, table 5-1.

8 City of Lemoore – Water Master Plan (Feb. 2020), page 4-4.

water that will be used during construction for dust control purposes. Generally, dust control at a construction site will use approximately 650 gallons/acre at least twice per day in traffic/use areas. The Project is proposed to be constructed on 156-acres in four phases over 16 years, with approximately one quarter of the development occurring every four years (or ~39 acres per phase). For purposes of estimating construction water use, it is assumed that of the 39 acres for each phase, approximately half (or 20 acres) would require dust control watering (for traffic/use areas) during each phase on any given work day. The standard amount of working days in a year is 261 days.

*Project Water Demand*

Based on the previous assumptions, Project water demand is calculated as follows:

| | |
|---|---|
| Residential: | 825 dwelling units X 3.1 persons per dwelling unit = 2,558 persons X 171 GPCD = 437,418 total gallons per day X 365 days per year = 159,657,570 gallons per year (or ~**490 afy**) |
| Parks/Public Landscaping: | 8 acres X 3.5 afy = ~**28 afy** |
| Total Water Demand: | 490 afy for Residential<br>28 afy for Parks<br>**518 afy** |

Based on these assumptions, Project operation would require approximately **518 afy** of water. Temporary water used for construction is discussed below.

| | |
|---|---|
| Construction (temporary): | 20 acres X 650 gal/acre X 2 waterings/day = 26,000 gallons X 261 working days = 6,786,000 gallons per phase (or 20.8 af). 20.8 af X 4 phases = 27,144,000 gallons (or ~**83 af**). |

As shown above, the Project would require approximately 518 afy of water on an on-going basis and approximately 83 af of water use associated with construction (one-time use).

The next section outlines applicable measures to reduce potable water use.

*Design Features to Reduce Potable Water Use*

As identified above, the proposed Project would require approximately 518 afy of water based on the calculations broadly applicable to residential developments. The Project is subject to water use reduction methods as follows:

1. The Project is subject to the Model Water Efficient Landscape Ordinance (MWELO) which encourages more efficient irrigation systems, onsite stormwater capture, limiting turf, etc.
2. In addition, California's Title 20 Water Efficiency Standards are applicable to the Project. These standards include:

   i. Toilets and urinals: Toilets must have a maximum water use of 1.28 gallons per flush and urinals are limited to 0.125 gallons or less per flush.
   ii. Residential lavatory faucets: Maximum flow can't exceed 1.2 gallons per minute.
   iii. Kitchen faucets: Maximum flow rate is 1.8 gallons per minute.
   iv. Shower devices: Maximum flow rate is 1.8 gallons per minute.

These measures will help reduce Project-related demand for potable water.

In addition, the City of Lemoore is part of the South Fork Kings Groundwater Sustainability Agency (South Fork GSA), which is under the purview of the Tulare Lake Subbasin Groundwater Sustainability Plan. According to the Sustainability Plan, several projects and management actions were chosen for the South Fork GSA as identified below:

| Project | Annualized Benefit (AF/Y) | Priority |
|---|---|---|
| Groundwater Measurement and Report | 1,500 | High |
| Surface Water Delivery Improvement | 5,000 | High |
| On-Farm Improvements | 2,500 | Medium |
| Conservation Reuse | 1,000 | Medium |

| | | |
|---|---|---|
| Cropping/Fallowing Program | 13,000 | High |
| **Demand Reduction Sub-Total** | **23,000** | |
| Aquifer Storage and Recovery | 13,000 | High |
| Surface Storage | 2,000 | Low |
| Mid-Kings Recharge Basin | 7,000 | Medium |
| **Supply Enhancement Sub-Total** | **22,000** | |
| **Total** | **45,000** | |

The City of Lemoore, as a member of the South Fork GSA, will work with the GSA to implement the projects and management actions identified by the GSA. Upon Project approval and annexation into the City of Lemoore, the Project will be subject to the requirements of the Sustainability Plan of the South Fork GSA.

*City-Wide Future Estimated Water Use*

Based on the most recent information available in the City's 2015 UWMP, the amount of groundwater pumped by the City from years 2011 – 2015 is shown below.[9]

| Year | Groundwater Volume Pumped |
|---|---|
| 2011 | 2,289 AF |
| 2012 | 2,471 AF |
| 2013 | 2,579 AF |
| 2014 | 2,422 AF |
| 2015 | 2,076 AF |

Additional information is provided below from the 2020 WMP regarding historical groundwater use in the City and is shown in gallons per capita per day (GPCD). The figures used for years 2017 – 2020 are based on the baseline average of 171 GPCD identified in the City's 2020 WMP.[10]

[9]City of Lemoore – 2015 UWMP, page 37, table 6-1.

[10] City of Lemoore - 2020 Water Master Plan, page 4-5, table 4.3.

| Year | Per Capita Demand |
|---|---|
| 2011 | 166 GPCD |
| 2012 | 174 GPCD |
| 2013 | 191 GPCD |
| 2014 | 157 GPCD |
| 2015 | 128 GPCD |
| 2016 | 124 GPCD |
| 2017 | 171 GPCD* |
| 2018 | 171 GPCD* |
| 2019 | 171 GPCD* |
| 2020 | 171 GPCD* |

*indicates baseline average

The City provides water distribution to approximately 26,000 residents, industrial and commercial users. The water distribution system consists of approximately 115 miles of active water pipelines, ranging from 1 to 18 inches, 10 active wells, 5 storage tanks and 4 pump stations.[11]

The City's existing groundwater wells and capacity are summarized as follows:[12]

| Well Name | Current Status | Well Capacity (GPM) |
|---|---|---|
| Well 2 | Inactive | -- |
| Well 3 | Abandoned | -- |
| Well 4 | Active | 1,850 |
| Well 5 | Active | 1,850 |
| Well 6 | Active | 1,100 |
| Well 7 | Active | 1,200 |
| Well 8 | Abandoned | -- |
| Well 9 | Emergency | 1,200 |
| Well 10 | Seasonal | 2,000 |
| Well 11 | Active | 800 |
| Well 12 | Backup | 1,150 |
| Well 13 | Active | 1,000 |
| Well 14 | Active | 1,000 |
| | **Total:** | **13,150** |

Based on the capacity of the existing wells, the City is capable of producing of up to 6,912 MG per year (13,150 GPM @ 24 hours/day X 365 days per year = 6,912 MG).

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[11] Ibid, page 1-1.

[12] Ibid, page 3-1.

*Comparison of Project Demand to Water Supply Sources*

As discussed herein, the sole source of water for the City is through groundwater pumping. The 2015 UWMP indicates there are 17.1 million AF to a depth of 300 feet and 82.5 million AF to the base of fresh groundwater within the Tulare Lake Subbasin. However, the City's groundwater wells are located within the boundary of the City and much of the groundwater located in the Subbasin is not accessible to the City. Using the acreage of the existing City and a conservative estimate of 100 vertical feet of groundwater as the volume of groundwater accessible to City wells at various depths, it was calculated that the existing groundwater water supply available to the City is 178,228 million gallons (MG). It should be noted that the City has not yet determined a safe yield, but it is assumed in the 2015 UWMP that the projected groundwater supply through year 2040 is also 178,228 MG. The 2015 UWMP's projections of reasonably available water are as follows: [13]

| Year | Reasonably Available Volume |
|---|---|
| 2020 | 178,228 MG |
| 2025 | 178,228 MG |
| 2030 | 178,228 MG |
| 2035 | 178,228 MG |
| 2040 | 178,228 MG |

It should be noted that the 178,228 MG is the estimated total volume of groundwater that is available. However, based on the City's existing water infrastructure, the City is only capable of producing up to 6,912 MG per year (13,150 GPM @ 24 hours/day X 365 days per year = 6,912 MG).

The City's 2015 UWMP assumed a City growth rate of 3.1% and provided population projections that were used for the 2015 UWMP's analysis as follows:

| Year | 2015 UWMP Population Assumptions |
|---|---|
| 2020 | 29,804 |
| 2025 | 34,719 |
| 2030 | 40,445 |
| 2035 | 47,115 |
| 2040 | 54,885 |

[13] City of Lemoore – 2015 Urban Water Management Plan, page 42.

More recent population projection information was provided in the City's Water Master Plan (2020 WMP). The Lacey Ranch Project was identified specifically in Figure 2.2 of the 2020 WMP as a "known future development" and was included in the 2020 WMP projections. The 2020 WMP provided the following population projections:

| Year | 2020 WMP Population Assumptions |
|---|---|
| 2020 | 27,089 |
| 2025 | 28,332 |
| 2030 | 29,633 |
| 2035 | 30,993 |
| 2040 | 32,416 |

The proposed Project would result in the development of up to 825 residential units. The City averages 3.1 persons per household, which could result in an increase of approximately 2,558 people at full Project buildout. Using the information from the 2020 WMP, the City's current population of 27,089 residents would be increased by approximately 9.5% to 29,647 from the Project alone. Table 3.9-1 shows the City's existing population (per the City's 2020 WMP), the increase in population from the proposed Project, and the City's 2020 WMP projected population in Year 2040. The last column shows the additional population that could be accommodated under the City's 2020 WMP even with full buildout of the proposed Project.

**Table 3.9-1: WMP Population Estimates**

| Year 2020 Population | Proposed Project Population | Existing Plus Project Population | WMP 2040 Projected Population | Additional Population That Could Be Accommodated Under the 2020 WMP Assuming Lacey Ranch Full Buildout |
|---|---|---|---|---|
| 27,089 | 2,558 | 29,647 | 32,416 | 2,769 |

While other future residential developments are also likely to occur in the City, it is likely that many of the newer residents would populate the Lacey Ranch Project, as it would provide a variety of housing needs (multi-family and single-family). The City's 2020 WMP anticipated a population of up to 32,416 people by 2040. Given the City's current population as identified in the 2020 WMP (27,089 persons), the City could accommodate the proposed Project plus an additional 2,769 persons according to the underlying assumptions of the City's 2020 WMP. The 2015 UWMP assumed a much larger population in 2040 of 54,885. Under that scenario, the City

could accommodate another 25,238 people (in addition to Year 2020 population + Lacey Ranch population). Based on this information, it is reasonable to assume that the Project is within the population growth projections (and associated water availability) identified in both the City's 2015 UWMP and the City's 2020 WMP.

As previously stated, the Project would require 518 AF (or approximately 169 MG) of water per year from the City's water system on an on-going basis and approximately 83 AF during construction (not on-going). The City can produce up to approximately 6,912 MG per year of potable water. The projected 2040 demand in the City is 4,830 MG, leaving a difference of 2,082 MG. At 169 MG, the Project would account for approximately 8.1% of the projected 2040 demand in the City. Since the City's 2015 UWMP has projected sufficient reasonably available volumes of water and because the Project is within the population growth assumptions (and associated water availability) identified in both the City's 2015 UWMP and 2020 WMP, there is sufficient water to serve the Project on an on-going basis.

The City's General Plan provides policies related to annexation of agricultural properties. Specifically, General Plan Policy PU-I-10 states the following: "Require that developers of agricultural land to be annexed to the City offer the water rights associated with this land to the City." The Project Applicant currently has 100 water shares (equivalent to 150 AFY) that are subject to this Policy. Mitigation Measure HYD – 1 requires evidence that the Kings County Local Agency Formation Commission (LAFCo) has approved the annexation of the project site into the City's boundaries and requires that 100 water shares be offered to the City to comply with Policy PU-I-10. In addition, the Project will be required to pay impact fees associated with connection to the City's water system. This requirement is identified in Mitigation Measure HYD – 2. With implementation of the mitigation measure, the impact is less than significant.

**Mitigation Measures:**

**HYD - 1:** **a)** Prior to issuance of grading permits or ground disturbance, the Project proponent shall provide approval of the proposed annexation into the City of Lemoore's service area.

**b)** The Project proponent shall offer the City 100 water shares (150 acre feet) of water. Documentation of the annexation and offer of water shall be provided to the City Community Development Department.

**HYD - 2:** Prior to issuance of building permits, the Project proponent shall pay water service impact fees for new development. The fee, or equivalent in-lieu, will be determined by the City of Lemoore. Evidence of the payment of impact fees shall be submitted to the City Community Development Department.

**Impact 3.9-3:** *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:*

*i. result in substantial erosion or siltation on- or offsite;*

*ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;*

*iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or*

*iv. impede or redirect flood flows?*

**Less Than Significant With Mitigation.** The site is currently used for agricultural purposes (most recently planted with alfalfa hay). Since the proposed Project would result in new impervious areas associated with site improvements, including new asphalt, concrete, and the proposed structures on site, the existing drainage pattern at the site would be altered. In addition, an unnamed irrigation ditch lies within 50 feet of the southeastern corner of the Project site. The Project will require a 50-foot easement for irrigation water to Lemoore Canal & Irrigation District Company as the above-ground canal along a portion of the western and southern boundary will be abandoned and relocated into an underground pipe through the Project site. The irrigation ditch is distributional from the Lemoore Canal to the east, which distributes water from the Kings River to the north. As noted in previously, the Project will be required to obtain permits in order to relocate the drainage. Mitigation Measure BIO-7 requires a delineation of the drainage and determination of jurisdiction prior to the issuance of grading permits. If the drainage is jurisdictional, additional permitting with the USACE, RWQCB, and/or CDFW is also required prior to construction activities. With implementation of BIO-7, impacts of the Project to water quality would be less than significant.

The Project site is located in "Area Two" as defined by the City's Storm Drainage Master Plan. According to the Plan, the Project is required to construct a detention basin that would discharge on a low-flow basis to the Lemoore Canal. The proposed Project would install storm water

drainage facilities (e.g. storm drainage mechanisms and storm water pipes), the final design of which is subject to review and approval by the City of Lemoore. A storm drainage plan has been developed that includes a 4.39-acre drainage basin at the southwest corner of the site. Stormwater will be collected from the Project to this detention basin and then discharged into the City's existing storm system through a pipeline that will be constructed by the Project.

Substantial erosion, siltation or flooding are not expected to occur as the site is developed. In accordance with the NPDES Stormwater Program, and as described in the Section 3.6 - Geology and Soils, the Project will be required to comply with existing regulatory requirements to prepare a SWPPP designed to control erosion and the loss of topsoil to the extent practicable using BMPs that the RWQCB has deemed effective in controlling erosion, sedimentation, runoff during construction activities. The specific controls are subject to the review and approval by the RWQCB and are an existing regulatory requirement. Implementation of Mitigation Measure GEO - 2 would ensure that the proposed Project would have a less than significant impact relative to this topic.

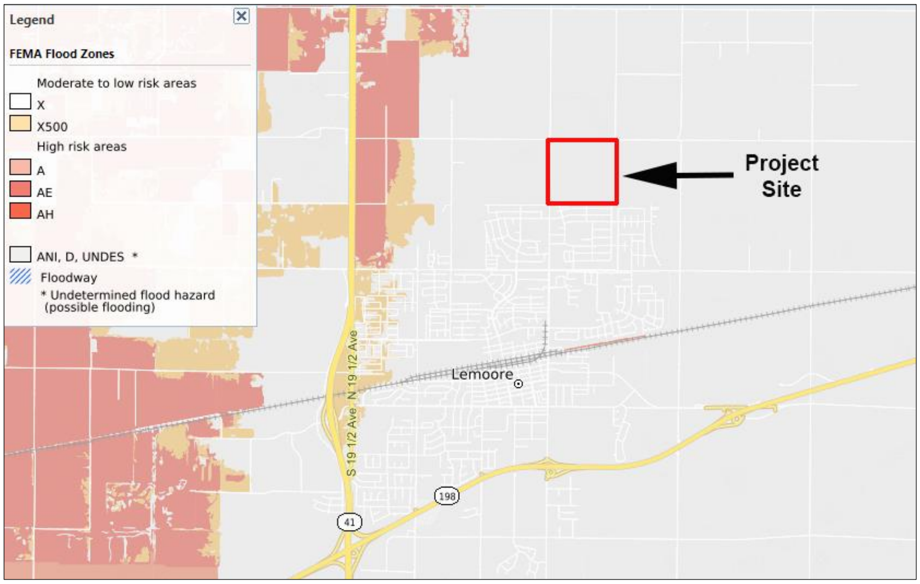
**Mitigation Measures:**

Implement Mitigation Measures BIO-7 and GEO-2

**Impact 3.9-4:** *In flood hazard, tsunami or seiche zones, risk release of pollutants due to project inundation?*

**Less Than Significant.** The Project is not located within a flood hazard area, tsunami or seiche zone. Figure 3.9-1 shows the Project site outside of any flood zones and thus does not represent a significant risk of flooding to the development. The site is also located more than 75 miles from the nearest ocean that could cause a tsunami and there are no bodies of water near the Project site that would represent any impacts related to seiche zones. Therefore, there is a less than significant impact related to flooding and related hazards.

**Figure 3.9-1**
**FEMA Floodplain Map**




**Mitigation Measures:** None are required.

**Impact 3.9-5:** *Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?*

**Less Than Significant With Mitigation.** See the response to Impacts 3.9-1 and 3.9-4 pertaining to water quality. The proposed Project would install storm water drainage facilities (e.g. storm drainage mechanisms and storm water pipes) that would be in compliance with the City of Lemoore Development Standards. In addition, water quality protection measures are included as mitigation and the Project would be in compliance with the City's Storm Drain Master Plan. This will ensure Project water quality impacts are less than significant.

The City of Lemoore is part of the South Fork Kings Groundwater Sustainability Agency (South Fork GSA), which is under the purview of the Tulare Lake Subbasin Groundwater Sustainability Plan. According to the Sustainability Plan, several projects and management actions were chosen for the South Fork GSA as identified in Table 3.9-2.

**Table 3.9-2: South Fork GSA Conceptual Projects**

| Project | Annualized Benefit (AF/Y) | Priority |
|---|---|---|
| Groundwater Measurement and Report | 1,500 | High |
| Surface Water Delivery Improvement | 5,000 | High |
| On-Farm Improvements | 2,500 | Medium |
| Conservation Reuse | 1,000 | Medium |
| Cropping/Fallowing Program | 13,000 | High |
| **Demand Reduction Sub-Total** | **23,000** | |
| Aquifer Storage and Recovery | 13,000 | High |
| Surface Storage | 2,000 | Low |
| Mid-Kings Recharge Basin | 7,000 | Medium |
| **Supply Enhancement Sub-Total** | **22,000** | |
| **Total** | **45,000** | |

The City of Lemoore, as a member of the South Fork GSA, will work with the GSA to implement the projects and management actions identified by the GSA. Upon Project approval and annexation into the City of Lemoore, the Project will be subject to the requirements of the Sustainability Plan of the South Fork GSA. Mitigation Measure MM GEO-2 requires the implementation of a SWPPP, which would include BMPs designed to prevent degrading water quality. Additionally, Mitigation Measure BIO-7 requires the Project to determine if additional permitting with the USACE, RWQCB, and/or CDFW is needed prior to construction activities to maintain adequate water quality standards. With implementation of BIO-7 and GEO-2, impacts of the Project to water quality would be less than significant. Therefore, the Project will not conflict with or obstruct a sustainable groundwater management plan.

**Mitigation Measures:**.

Implement of BIO-7 and GEO-2.

**Cumulative Impacts**

**Cumulatively significant and unavoidable even with implementation of mitigation.** The geographic area for cumulative hydrology analysis is the land area included in the Tulare Lake Sub Basin. Buildout of the City's General Plan and other pending projects in the Basin area will contribute to changes to stormwater collection systems and groundwater quality as well as an increase in groundwater demand.

Development of the Project in combination with future projects associated with buildout of the General Plan would increase the amount of impervious surfaces in the area. Stormwater runoff is typically directed into adjacent streets where it flows to the nearest drainage system. As with the Project, each new development would be required to design and develop a stormwater collection system that ensures appropriate water quality protection measures and sufficient capacity. All projects would be required to implement Best Management Practices and to conform to the existing NPDES water quality regulations. Mitigation Measure MM GEO-2 would require the Project to prepare and implement a SWPPP in accordance with City requirements. Similarly, all projects that would not retain all runoff onsite would be required to prepare a SWPPP, which would include BMPs designed to prevent the mixture of sediment and other pollutants with stormwater and degrading water quality. the Project requires an abandonment and relocation of an irrigation canal. Additionally, Mitigation Measure BIO-7 requires a delineation of the drainage and determination of jurisdiction prior to the issuance of grading permits. Additional permitting with the USACE, RWQCB, and/or CDFW may also be required prior to construction activities to maintain adequate water quality standards. With implementation of BIO-7 and GEO-2, cumulative impacts of the Project to water quality would be less than significant. Therefore, cumulative impacts associated with stormwater collection and water quality is less than significant.

With respect to erosion, drainage, and flooding, the project would implement Mitigation Measure MM BIO-7 and GEO-2 would minimize direct impacts on erosion, drainage, and flooding. It is anticipated that other cumulative scenario projects would be required to implement similar measures, in order to minimize erosion, drainage, and flooding related impacts. Additionally, drainage related impacts from cumulative scenario projects would be primarily localized. Therefore, cumulative scenario impacts on erosion, drainage, and flooding are not anticipated to be cumulatively considerable, and the project would not contribute to a cumulative impact on flooding, erosion, or drainage.

The City of Lemoore utilizes groundwater as its sole source of potable water. As identified herein and in the SB 610 Water Supply Assessment, the City anticipates being able to provide adequate potable water to the City through year 2040. However, development of the Project in combination

with future projects within the Basin would increase the amount of overdraft in the Basin. The City of Lemoore is part of the South Fork GSA, which is under the purview of the Tulare Lake Subbasin Groundwater Sustainability Plan. According to the Sustainability Plan, several projects and management actions were chosen for the South Fork GSA as identified herein. As the City of Lemoore will provide water to the proposed Project (upon approval), the Project will be subject to the requirements of the GSA. The projects identified by the South Fork GSA are intended to achieve groundwater balance.

Mitigation Measure HYD – 1 requires evidence that the Kings LAFCo approved the annexation of the Project site into the City's boundaries and requires that 100 water shares be offered to the City to comply with Policy PU-I-10. HYD-2 requires the payment of water service impact fees to reduce Project impacts to the City's water system. However, despite the implementation of mitigation, the proposed Project's water use, in combination with other cumulative scenario projects requiring water from the Tulare Lake Subbasin (Groundwater Basin No. 5-022.12) during the same time frame, would result in ***cumulatively considerable and unavoidable significant impacts*** to groundwater supplies in the Basin.

# 3.10 Land Use and Planning

This section of the DEIR evaluates the potential environmental effects related to land use and planning associated with implementation of the proposed Project.

## Environmental Setting

The proposed Project is located on approximately 156-acres immediately north of the City of Lemoore (City) in Kings County and is bounded by West Lacey Blvd to the north and 18th Avenue to the west. State Route (SR) 41 is located approximately 1.7 miles to the west and SR 198 lies approximately 2.2 miles south of the Project site (See Figures 2-2 and 2-3 in Chapter Two – Project Description). The general latitude and longitude for the Project site is 36.192795° and 119.463438°.

The proposed Project will be constructed on Assessor's Parcel Number 021-030-057-000. The Project applicant is proposing to subdivide and develop 156 acres of undeveloped land into an 825-unit planned residential community with a mix of single-family and multi-family housing units. Approximately one-third of the site (the southern one-third) is within the City's Sphere of Influence (SOI) and has been planned for development, while the remaining two-thirds are currently outside the SOI. The site is proposed for annexation into the City limits of Lemoore.. A City municipal well is located adjacent to the southwest site boundary. The site is located in the Kings River Conservation District

The Project includes the construction of a 4.39-acre storm drain basin and will require connection to various City-operated systems. These include sewer, water and storm drain facilities. The Project will be responsible for construction of connection points to the City's existing infrastructure. The Project also includes improvements and landscaping along the frontage roads and within the site itself. The Project includes a 50′ easement for irrigation water to Lemoore Canal & Irrigation District Co. as the canal along a portion of the western and southern boundary will be abandoned and relocated

The Project site is currently designated as Limited Agriculture – 10 Acres in the Kings County General Plan and zoned AL-10 (Limited Agriculture – 10 Acres) by the Kings County Zoning Ordinance. The southern one-third of the Project site is designated as "Agricultural/Rural Residential" in the City's General Plan. The parcel has been used for commercial agricultural purposes as recently as spring of 2021, specifically for cultivation of alfalfa. The parcel is identified as Prime Farmland by the California Department of Conservation Farmland Mapping and Monitoring Program (FMMP). FMMP classifies Prime Farmland as farmland with the best

combination of physical and chemical features able to sustain long term agricultural production. The FMMP map for the County identifies areas to the north, east and west as primarily Prime Farmland, with much smaller regions of Unique Farmland, Semi-Agricultural and Rural Commercial Land and Rural Residential Land interspersed. The City of Lemoore lies immediately south and is classified as Urban and Built-Up Land. The Project parcel is currently under a Williamson Act Contract, as described in Chapter 3.1 – Agriculture and Forestry Resources.

Existing land uses surrounding the Project site (currently in alfalfa cultivation) consist of farmland/ agricultural operations, rural residential housing, and intensive residential development to the south.

The Project developer has applied to the City for approval of the annexation of 156 acres from unincorporated Kings County into the City of Lemoore, approval of General Plan Amendment, approval of Zone Change, adoption of Lacey Ranch Master Plan through a Planned Unit Development, approval of Tentative Tract Map, approval of Major Site Plan Review, and the issuance of Grading / Building Permits. t. The Project would provide housing for the community of Lemoore and the surrounding areas.

## Regulatory Setting

Federal Regulations

There are no federal regulations pertinent to local land use and planning.

State of California Regulations

*The Cortese-Knox-Herztberg Local Government Reorganization Act*

The Cortese-Knox-Herztberg Local Government Reorganization Act of 2000 (Government Code Section 56300 et seq.) governs the establishment and revision of local government boundaries. The Act was a comprehensive revision of the Cortese-Knox-Herztberg Local Government Reorganization Act of 1985. The Act is a policy of the state to encourage orderly growth and development that are essential to the social, fiscal, and economic well-being of the state. The intent of the Act is to promote orderly development while balancing competing state interests of discouraging urban sprawl, preserving open space and prime agricultural lands, and efficiently extending government services. The Act had previously established the County Local Agency Formation Commission (LAFCO), which gave it authority to consider and approve city and special district annexation, dissolution, and formation.

*California Land Conservation Act*

The California Land Conservation Act, better known as the Williamson Act, was enacted by the State Legislature in 1965 to encourage the preservation of agricultural lands. Under the provisions of the act, landowners agreeing to keep their lands under agricultural production for a minimum of ten years receive property tax adjustments. Williamson Contracts limit the use of the properties to agricultural, open space, and other compatible use, Williamson Act lands are assessed based on their agricultural value, rather than their potential market value under nonagricultural uses.

Local Regulations

*Local Agency Formation Commission of Kings County*

Local Area Formation Commissions (LAFCOs) review proposals for the formation of new local governmental agencies and for changes in the organization of existing agencies. The LAFCO of Kings County assists in balancing the competing needs in the region for efficient services, affordable housing, economic opportunity, and conservation of natural resources. In addition, the LAFCO of Kings County considers effects that development may have on existing agricultural land and also discourages urban sprawl (i.e. irregular and disorganized growth occurring without apparent design or plan).

*City of Lemoore General Plan*

The City of Lemoore's General Plan is the City's long-range planning document, to the year 2030. It consists of nine chapters: Introduction; Land Use; Community Design; Circulation; Parks, Schools and Community Facilities; Public Utilities; Conservation and Open Space; Safety and Noise; and Implementing and Monitoring. The Land Use Chapter presents the guiding principles of the land use framework, the General Plan Diagram, the land use classification system, and the buildout of this Plan to the year 2030.[1]

*City of Lemoore General Plan Policies*

**Note**: The General Plan policies listed on the following page are only from the Land Use Element of the City's General Plan. For the list of other applicable General Plan policies (e.g. Community Design, Circulation, Public Utilities, etc.), please refer to Table 3.10-2 for a list

[1] City of Lemoore General Plan, 2030. Land Use Chapter. https://lemoore.com/wp-content/uploads/2018/01/lemoore_gp_ch2_land_use_3_20_2012.pdf. Page 1. Accessed June 2021.

of all applicable General Plan policies and associated Project consistency determination. Relevant General Plan Land Use Element policies are as follows:

| | |
|---|---|
| **LU-G-1** | Promote a sustainable, balanced land use pattern that satisfies existing needs and safeguards future needs of the City. |
| **LU-G-3** | Ensure that new development provides for infrastructure, schools, parks, neighborhood shops, and community facilities in close proximity to residents. |
| **LU-G-4** | Provide for residential development with strong community identity, appropriate and compatible scale, identifiable centers and edges and well-defined public spaces for recreation and civic activities. |
| **LU-G-5** | Provide for a full range of housing types and prices within each neighborhood, including minimum and maximum requirements for traditional and small-lot single family homes, townhouses, duplexes, triplexes, and multi-family housing to ensure that the economic needs of all segments of the community are met and a jobs-housing balance is provided. |
| **LU-G-6** | Provide for a transition between higher density and lower density residential areas, or require buffers of varying size between residential uses and nonresidential uses without restricting pedestrian and bicycle access. |
| **LU-G-12** | Provide appropriate settings for a diverse range of civic, institutional and community land uses. |
| **LU-I-4** | Require Contiguous development within the SOI unless it can be demonstrated that land which is contiguous to urban development is unavailable or development is economically infeasible. |

**LU-I-7** Create, maintain, or upgrade Lemoore's public and private infrastructure to support future land use and planned development under the General Plan.

*Infrastructure needs include fiber optic and/or wireless communications systems, along with streets, water, sewer, electricity, natural gas, telephone, and cable.*

**LU-I-8** Require new development to pay its fair share of the costs of public infrastructure, services and transportation facilities, in accordance with State law.

*These may include parks, fire and police stations, schools, utilities, roads or other needed infrastructure.*

**LU-I-9** Allow development only when adequate public facilities and infrastructure are available or planned in conjunction with use, consistent with the traffic level of service (LOS) standards and standards for public facilities and services established in this Plan.

**LU-I-10** Ensure new neighborhoods include a mix of housing types and community facilities oriented to a neighborhood center, in a land use mix consistent with Table 2.2 and Table 2.4 in the Land Use Chapter.

*A neighborhood will be defined by the local street system and typically include 100-160 acres. New zoning regulations for residential neighborhoods will include specific standards for housing types, including spacing criteria, to ensure that a full range of housing is provided and that large projects with only a single type of housing are not built. The City also hopes that this housing mix can be achieved within the existing residential areas as well, through infill development. This policy would not apply to neighborhoods with approved area plans or subject to development agreements or to infill development on sites less than 100 acres in size.*

**LU-I-11** Require a centrally located neighborhood square or “commons” within each new residential neighborhood that will serve as a focal point for the surrounding community.

*Centers are concentrations of activity and uses that serve a neighborhood function. They are located within close proximity and easy walking distance to adjacent residences, generally no more than ½ mile away. Squares should be at 25,000 square feet in size and include outdoor seating and other pedestrian amenities.*

**LU-I-12** Ensure that the scale, operation, location, and other characteristics of community facilities, including parks, schools, child care facilities, religious institutions, other public and quasi-public facilities, enhance the character and quality of neighborhoods.

**LU-I-13** Require new residential development adjacent to established neighborhoods to provide a transition zone where the scale, architectural character, pedestrian circulation and vehicular access routes of both new and old neighborhoods are well integrated.

**LU-I-14** Require multi-family developments be planned near existing or projected neighborhood centers and open space, and be located within ¼ mile of a collector or arterial street.

**LU-I-17** Utilize the Agricultural/Rural Residential designated areas as a mechanism for preserving active agricultural land and buffering urban uses from agricultural uses.

**LU-I-41** Ensure adequate elementary and high school sites are reserved in new subdivisions, consistent with the Land Use Diagram and State law.

**LU-I-42** Designate land for public uses to be maintained through capital projects for parks and open spaces, police and fire services, water and sanitary facilities, infrastructure and other City services.

**LU-I-43** Promote the development of community facilities accessible to both vehicles and pedestrian.

Lemoore Zoning Ordinance

The Lemoore Zoning Ordinance establishes regulations governing the development and use of land in accordance with the City of Lemoore general plan (general plan) in a manner that protects the public health, safety, comfort and convenience, and welfare of residents and businesses of Lemoore. The zoning code provides information to facilitate the efficient review of development proposals, while providing opportunity for public review and comment for proposals that may have a significant impact on the community.

Kings County Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS)

The Regional Transportation Plan (RTP) covers a 25-year period and is the long-range planning, policy, action, financial, and sustainability document for the Kings County region. Kings County Association of Governments (KCAG) is required to develop a comprehensive long-range planning document or RTP every four years. The RTP establishes regional goals, identifies present and future needs, deficiencies and constraints, and fiscally constrained infrastructure improvements. The RTP discusses the major transportation issues in the Kings County region including state highways, transportation systems management, and transportation control measures.

The RTP represents an accumulation of all the plans and programs adopted by the local agencies, including the cities of Avenal, Corcoran, Hanford, and Lemoore in addition to the unincorporated communities of Kings County. The most recently adopted Kings County RTP is from 2018.

The Sustainable Communities Strategy (SCS), required by Senate Bill 375 (SB 375), is a component of the RTP and is a strategy for the region that will demonstrate how it will meet the greenhouse gas (GHG) emissions targets that are set by the state.

## Thresholds of Significance

In accordance with Appendix G to the State CEQA Guidelines, the project would have a significant impact on land use as follows:

- Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

The lead agency determined in the Notice of Preparation/Initial Study (NOP/IS), located in Appendix A of this EIR, that the following environmental issue areas would result in no impacts or less-than-significant impacts and, therefore, are scoped out of this EIR. Thus, the following issue area is scoped out of further analysis in this EIR:

- Physically divide an established community?

The components of the Project would be developed on undeveloped land that has been historically used for agricultural uses. Land uses surrounding the Project site are primarily agricultural production. The proposed Project is located just north of the Lemoore City limits and would be adjacent to existing residential development on the south. The Project would not divide or physically impact the established community but would provide a variety of housing opportunities with a range of densities, styles, sizes and values that will be designed to satisfy existing and future demand for quality housing in the area. The Project will also provide local vehicular and pedestrian access points from the Project site to existing urban development to the south. Therefore, the Project will not physically divide an established community.

## Impacts and Mitigation Measures

**Impact 3.10-1:** *Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?*

**Less Than Significant.** The City of Lemoore General Plan and Zoning Ordinance establish land use policies and regulations that are applicable to the proposed Project. Upon annexation, the Project will be subject to the land use plans, policies and regulations of these documents. The following discussion evaluates the conformity of the proposed Project to these plans, policies and regulations.

The site is partially designated by the City of Lemoore General Plan for future residential uses and is currently zoned as Limited Agricultural-10 District (AL-10) by Kings County. Approximately one-third of the site (the southern one-third) is within the City's Sphere of Influence (SOI) while the remaining two-thirds are currently outside the SOI. The entire site is proposed for annexation into the City limits of Lemoore. The site is proposed to be converted

from agriculturally designated land to residential/parks/drainage basin land uses. Table 3.10-1 depicts the specific proposed land use designations and zone districts of the proposed Project.

**Table 3.10-1: Proposed Land Use and Zoning Designations**

| Proposed Land Use | Proposed Land Use Designation | Proposed Zone District |
|---|---|---|
| Single Family lots | Low Density Residential | RLD – Low Density Residential |
| 12 unit per acre multifamily | Medium Density Residential | RMD – Medium Density Residential |
| 20 unit per acre multifamily | High Density Residential | RHD – High Density Residential |
| Parks | Parks/Recreation | PR – Parks/Recreation |
| Storm drainage basin | Greenway/Detention Basin | PR – Parks/Recreation |

The Project area has been in active agricultural production and is proposed for an 825-unit single and multi-family development, with the approval of the following actions:

- Annex approximately 156 acres from Kings County into the City of Lemoore
- Approve a General Plan Amendment
- Approve a Zone Change
- Adopt the Lacey Ranch Area Master Plan through a Planned Unit Development
- Approve the Project's Tentative Tract Map
- Amend Sphere of Influence

Consistency with Zoning Ordinance

Once annexed into the City, the Project site will be zoned for residential and parks/recreation as identified in Table 3.10-1. These zone districts are appropriate for uses such as those proposed by the Project. Therefore, upon annexation, the Project site will be consistent with the City's Zoning Ordinance.

Consistency with Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS)

The Project will result in less than significant impacts to greenhouse gas emissions as indicated in 3.7 – Greenhouse Gases and would therefore be in compliance with the SCS. The Project would not otherwise conflict with the RTP.

Consistency with the General Plan

The site is partially designated by the City of Lemoore General Plan for future residential uses and is currently zoned as Limited Agricultural-10 District (AL-10) by Kings County. Approximately one-third of the site (the southern one-third) is within the City's Sphere of Influence (SOI) while the remaining two-thirds are currently outside the SOI. The entire site is proposed for annexation into the City limits of Lemoore. Table 3.10-2 summarizes the proposed Project's consistency with the applicable goals and policies of the City's General Plan. As demonstrated in the table, the proposed Project would be consistent with the applicable goals and policies of the General Plan.

**Table 3.10-2**
**General Plan Consistency Analysis**

| Chapter – Element | No. | Goal/Objective/Policy Text | Consistency Determination |
|---|---|---|---|
| **Land Use** | LU-G-1 | Promote a sustainable, balanced land use pattern that satisfies existing needs and safeguards future needs of the City. | **Yes:** The Project is bordered to the south by existing residential development and will result in a contiguous pattern of residential development. |
| **Land Use** | LU-G-3 | Ensure that new development provides for infrastructure, schools, parks, neighborhood shops, and community facilities in close proximity to residents. | **Yes:** The Project will provide the necessary infrastructure for the development. In addition, the Project provides park space/trails will pay school and park fees associated with the development. The development is located approximately 1.1 miles from downtown Lemoore with intervening commercial facilities that can be utilized by future residents of the Project. |
| **Land Use** | LU-G-4 | Provide for residential development with strong community identity, appropriate and compatible scale, | **Yes:** The development has been designed so that all structures will conform to |

| Chapter – Element | No. | Goal/Objective/Policy Text | Consistency Determination |
|---|---|---|---|
| | | identifiable centers and edges and well-defined public spaces for recreation and civic activities. | design standards set forth by the City's General Plan, Zoning Ordinance, Municipal Codes and Improvement Standards. The Project includes recreational facilities and a layout/design that is of appropriate scale and is compatible with the area. |
| **Land Use** | LU-G-5 | Provide for a full range of housing types and prices within each neighborhood, including minimum and maximum requirements for traditional and small-lot single family homes, townhouses, duplexes, triplexes, and multi-family housing to ensure that the economic needs of all segments of the community are met and a jobs-housing balance is provided. | **Yes:** The Project provides a variety of single and multi-family housing types. The development has been designed so that all structures will conform to design standards set forth by the City's General Plan, Zoning Ordinance, Municipal Codes and Improvement Standards. |
| **Land Use** | LU-G-6 | Provide for a transition between higher density and lower density residential areas or require buffers of varying size between residential uses and nonresidential uses without restricting pedestrian and bicycle access. | **Yes:** The Project's multi-family component is consolidated at the southwestern corner of the site. This component is buffered from single family residential by roadways and/or block walls. A trail is proposed adjacent to the multi-family development and access to pedestrian and bicycle facilities will not be impacted. |
| **Land Use** | LU-G-12 | Provide appropriate settings for a diverse range of civic, institutional and community land uses. | **Yes:** The Project provides a four parks for a total of 7.9 acres and 1.64 acres of trail area throughout the |

| Chapter – Element | No. | Goal/Objective/Policy Text | Consistency Determination |
|---|---|---|---|
| | | | development. There is no institutional component of the Project. |
| **Land Use** | LU-I-4 | Require contiguous development within the SOI unless it can be demonstrated that land which is contiguous to urban development is unavailable or development is economically infeasible. | **Yes:** The Project is proposing to amend the SOI. However, development will be contiguous to the existing urban development to the south. |
| **Land Use** | LU-I-7 | Create, maintain, or upgrade Lemoore's public and private infrastructure to support future land use and planned development under the General Plan | **Yes:** The Project will either construct or pay their fair share of required infrastructure improvements. |
| **Land Use** | LU-I-8 | Require new development to pay its fair share of the costs of public infrastructure, services and transportation facilities, in accordance with State law. | **Yes:** The Project will either construct or pay their fair share of required infrastructure improvements, including for transportation facilities. |
| **Land Use** | LU-I-9 | Allow development only when adequate public facilities and infrastructure are available or planned in conjunction with use, consistent with the traffic level of service (LOS) standards and standards for public facilities and services established in this Plan. | **Yes:** LOS standards will be maintained with implementation of mitigation measure TRA-1. |
| **Land Use** | LU-I-10 | Ensure new neighborhoods include a mix of housing types and community facilities oriented to a neighborhood center, in a land use mix consistent with Table 2.2 and Table 2.4 in the Land Use Chapter. | **Yes:** The Project provides a mix of single and multi-family development. At the center of the development is a public park (approximately 4.09 acres). The development is located approximately 1.1 miles from downtown Lemoore with intervening |

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| | | | commercial facilities that can be utilized by future residents of the Project. |
| **Land Use** | LU-I-11 | Require a centrally located neighborhood square or "commons" within each new residential neighborhood that will serve as a focal point for the surrounding community. | **Yes:** At the center of the development is a public park (approximately 4.09 acres). This public area will serve as a focal point of the development. |
| **Land Use** | LU-I-12 | Ensure that the scale, operation, location, and other characteristics of community facilities, including parks, schools, child care facilities, religious institutions, other public and quasi-public facilities, enhance the character and quality of neighborhoods. | **Yes:** The Project does not include any institutional facilities or public facilities other than parks. The Project includes a total of four parks for a total of 7.9 acres and 1.64 acres of trail area. These are appropriately scaled for the size of the development and will enhance the quality of the neighborhood. |
| **Land Use** | LU-I-13 | Require new residential development adjacent to established neighborhoods to provide a transition zone where the scale, architectural character, pedestrian circulation and vehicular access routes of both new and old neighborhoods are well integrated. | **Yes:** The Project will have similar scale, character and vehicular routes as existing residential development in the area. There will be no access roads to the existing residential development to the south. Access will be from 18th Avenue and Lacey Boulevard. |
| **Land Use** | LU-I-14 | Require multi-family developments be planned near existing or projected neighborhood centers and open space, and be located within ¼ mile of a collector or arterial street. | **Yes:** The multi-family developments will occur in the southwest corner of |

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| | | | the Project site in close proximity to park space in the middle of the development. The multi-family component is within ¼ mile of an arterial street (18th Ave./Lemoore Ave. is designated as an arterial south of Glendale Ave. |
| **Land Use** | LU-I-17 | Utilize the Agricultural/Rural Residential designated areas as a mechanism for preserving active agricultural land and buffering urban uses from agricultural uses | **Yes:** The Project site is currently designated as Agricultural/Residential. This area was partially intended for future residential development by the City's General Plan, (for uses such as proposed by the Project). The Project will require a General Plan Amendment and a Zone Change upon annexation. The areas to the north, east and west of the Project site will remain in their current agricultural designations. The Project would result in contiguous urban development (there is existing residential to the south) and would provide an appropriate buffer between urban and agricultural land uses. |
| **Land Use** | LU-I-41 | Ensure adequate elementary and high school sites are reserved in new subdivisions, consistent with the Land Use Diagram and State law. | **Yes:** There are no school sites designated within the development, as none were determined to be necessary. To mitigate the |

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| | | | Project's impacts to schools, the Project is required to pay impact fees as determined by the School District and the State Allocation Board. |
| **Land Use** | LU-I-42 | Designate land for public uses to be maintained through capital projects for parks and open spaces, police and fire services, water and sanitary facilities, infrastructure and other City services. | **Yes:** The Project includes a 4.39 acre detention basin within the development. In addition, the Project includes a total of four parks for a total of 7.9 acres and 1.64 acres of trail area. |
| **Land Use** | LU-I-43 | Promote the development of community facilities accessible to both vehicles and pedestrians. | **Yes: T**he Project includes a total of four parks for a total of 7.9 acres and 1.64 acres of trail area. These will be accessible to the public (both pedestrian access and on-street parking for vehicles to access the facilities). |
| **Community Design** | CD-G-4 | Create a well-connected hierarchy of streets that serve existing and planned neighborhoods, and strengthen the visual and aesthetic character of the City. | **Yes:** The Project is designed with short blocks, traffic calming features, and curved roadways that provide connectivity within the development and improve the visual character of the development. |
| **Community Design** | CD-G-5 | Create a comfortable street environment for motorized and non-motorized users. | **Yes:** The Project is designed with short blocks, traffic calming features, curved roadways, and a trail |

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| | | | system that is easy to navigate for both pedestrians and vehicle. |
| **Community Design** | CD-G-11 | Encourage development of diverse and distinctive neighborhoods. | **Yes:** The Project provides a mix of housing types, street layouts, and recreational facilities. |
| **Community Design** | CD-G-12 | Develop a sense of neighborhood identity through design elements and neighborhood focal points, such as commercial areas, schools, parks, community centers, or a combination of these elements. | **Yes:** At the center of the development is a public park (approximately 4.09 acres). This public area will serve as a focal point of the development. In addition, other smaller parks and trails will enhance the sense of neighborhood identity in the development. |
| **Community Design** | CD-G-13 | Ensure that new street networks are coherent and provide multimodal access within and between neighborhoods. | **Yes:** The Project is designed with short blocks, traffic calming features, curved roadways, and a trail system that is easy to navigate for both pedestrians and vehicle. |
| **Community Design** | CD-G-15 | Foster an efficient and comprehensive outdoor lighting system. | **Yes:** The development has been designed so that all lighting will conform to design standards set forth by the City's General Plan, Zoning Ordinance, Municipal Codes and Improvement Standards. |
| **Community Design** | CD-I-2 | Maintain views into the agricultural lands on the rural side of the roadways by not planting within the right-of-way and spacing trees farther apart. | **Yes:** The development is subject to City review/approval based on |

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| | | | design standards set forth by the City's General Plan, Zoning Ordinance, Municipal Codes and Improvement Standards. This includes placement of landscaping. |
| **Community Design** | CD-I-3 | Work with the Lemoore Canal and Irrigation Company and other canal companies to retain open canals and restore the Lemoore Canal to its natural appearance, and study the possibility of providing a bicycle trail along the canal. | **Yes:** A short segment of an existing open canal located at the southeast corner will be piped (underground). The canal is not located in an area that would substantially benefit from keeping the canal "open" since this small section of the canal is located in a rural area and would not be suitable for an adjacent trail. However, the Project will construct a trail within the development. |
| **Community Design** | CD-I-4 | Maintain scenic vistas to the Coalinga Mountains, other natural features, and landmark buildings. | **Yes:** Views of the Coalinga Mountains or other natural features will not be substantially impeded by the Project. Due to the lack of existing viewpoints surrounding the Project site, and given the scale of the Project, it is not anticipated that the Project would disrupt existing views of these resources. |
| **Community Design** | CD-I-10 | Incorporate roundabouts as an alternative to signals and stop signs, and provide landscaping and other aesthetically appealing features in them where appropriate. | **Yes:** Although the Project does not include roundabouts (as none |

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| | | | were deemed necessary), the Project does include “traffic circles” that will serve as a “traffic calming device” and are more aesthetically pleasing than stop signs. |
| **Community Design** | CD-I-11 | Preserve and protect heritage trees. | **Yes:** There are no heritage trees that require removal. |
| **Community Design** | CD-I-14 | Continue the City’s utility undergrounding program to replace existing wooden utility poles and overhead lines with underground utility lines along major thoroughfares, and require undergrounding of utilities in all new development. | **Yes:** The Project is required to install utilities underground. |
| **Community Design** | CD-I-44 | Ensure that new residential development enhances Lemoore’s neighborhood character and connectivity by establishing the following standards in the subdivision ordinance:<br>o Maximum block length: 500 feet, except for blocks with single-family residential uses that may be up to 600 feet long (750 feet with a mid-block pedestrian connection);<br>o Required connectivity: All new streets and alleys must connect to other streets and alleys to form a continuous vehicular and pedestrian network. Local, internal streets should be narrow and designed with traffic calming features to control speed.<br>o Cul-de-sacs: Limit use of cul-de-sacs to no more than ten percent of the length of all streets in a subdivision map, where constrained by surrounding land attributes.<br>o Loop-outs: Encourage use of loop-out streets rather than cul-de-sacs. | **Yes:** The development is subject to City review/approval based on design standards set forth by the City’s General Plan, Zoning Ordinance, Municipal Codes and Improvement Standards. The City has reviewed the site layout and determined that it is adequate. |
| **Community Design** | CD-I-45 | Establish residential design guidelines for new subdivisions to include but not be limited to:<br>o Require use of varied massing and roof types, floor plans, detailed planting design or color and materials. Maintain overall harmony while providing smaller-scale variety; | **Yes:** The development is subject to City review/approval based on design standards set forth by the City’s General Plan, Zoning Ordinance, |

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| | | ○ Require building facades with distinctive architectural features like windows, chimneys, and other such elements. Use articulation of building massing to reveal internal organization of building elements such as stairs and atriums, internal gathering spaces and major interior spaces;<br>○ Require corner buildings to have wrap-around façade architectural details; and<br>○ For single-family housing: Ensure adjacent units are different in size, composition and/or design. Designs used in a subdivision should be substantially different from one another so that no plan/elevation should look similar to another.<br>○ Homes built in pre-existing neighborhoods should be built in similar scale and design to existing neighborhood as determined by the Planning Department. | Municipal Codes and Improvement Standards. The Project is required to adhere to this Implementing Policy. |
| **Community Design** | CD-I-46 | Require a mix of housing types and community-oriented facilities within multifamily zoning districts. New multi-family residential development should meet the following design criteria:<br>○ Minimum 20-foot landscaped yards between streets and parking areas;<br>○ Parking frontages limited to no more than 25 percent of lot frontages;<br>○ Carport and garage designs that match building designs;<br>○ Carport locations restricted such that they are not highly visible from public streets; and portable carport covers be prohibited;<br>○ Open space such that each dwelling unit has at least 400 square feet of on-site open space, which may be private open space provided by balconies or patios, or common open space;<br>○ Common open space for all ages, including tot lots;<br>○ At least 50 percent of open space shall be landscaped;<br>○ Buffer landscaping, at least 10 feet deep shall be provided along the project perimeter where adjacent to sensitive | **Yes:** The Project includes a mix of housing types (single and multi-family) and will provide recreational facilities in the form of parks and trails. The development is subject to City review/approval based on design standards set forth by the City's General Plan, Zoning Ordinance, Municipal Codes and Improvement Standards. |

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| | | uses (usually referred to as a 'buffer area');<br>o Architecturally interesting buildings that are not bulky and "box-like." This can be created by requiring variable roof forms in building designs and limiting the dimension of any single building to 125 feet;<br>o Building entries to have roofed projections or recessed entries;<br>o Roof-mounted mechanical equipment should be screened or incorporated into a roof design or, if this cannot be done, such equipment must be groundmounted on the interior side or in the rear of the lot; and<br>o Pedestrian access provided by walkways to link residential units with other units and with recreational and other facilities within a project. | |
| **Community Design** | CD-I-47 | Discourage gated communities that restrict public access to multi-family and single family residential areas but permit only if they do not result in cutting off critical access between neighborhoods in accordance with thresholds, standards, and design criteria and conditional use permit process described in the Zoning Ordinance consistent with other General Plan policies. Small town character should remain an important factor throughout the design of any proposed gated community. | **Yes:** The Project does not include any gated communities. |
| **Community Design** | CD-I-48 | Minimize the visual dominance of garages by establishing specific standards in the Zoning Ordinance, including:<br>o Limiting the front width of a house that can be occupied with a garage to be no more than one-half the building width;<br>o Encourage garage setbacks from the front façade, permitting a range of setbacks none of which may extend more than 5 feet in front of the building;<br>o Requiring additional setback or off-setting of such garages if more than a two-car garage entrance is provided;<br>o Encouraging use of alleys in new development, with garages accessed from the rear, yet maintain backyards; and<br>o Incorporating design elements on the second level above the garages such as accessory dwelling units, bay windows or balconies. | **Yes:** The development is subject to City review/approval based on design standards set forth by the City's General Plan, Zoning Ordinance, Municipal Codes and Improvement Standards. The Project is required to adhere to this Implementing Policy. |

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| **Community Design** | CD-I-50 | Require all new multi-family developments submit plans for trash enclosures for design review approval. | **Yes:** The development is subject to City review/approval based on design standards set forth by the City's General Plan, Zoning Ordinance, Municipal Codes and Improvement Standards. The Project is required to adhere to this Implementing Policy. |
| **Community Design** | CD-I-51 | Require residential neighborhoods to incorporate architecture and site plan considerations into the design and location of cluster mailboxes to ensure design compatibility and increase social contact in the neighborhood. | **Yes:** The development is subject to City review/approval based on design standards set forth by the City's General Plan, Zoning Ordinance, Municipal Codes and Improvement Standards. The Project is required to adhere to this Implementing Policy. |
| **Community Design** | CD-I-53 | Require new housing to provide transitions between the street and building, with variable front setbacks, building articulation and massing. | **Yes:** The development is subject to City review/approval based on design standards set forth by the City's General Plan, Zoning Ordinance, Municipal Codes and Improvement Standards. The Project is required to adhere to this Implementing Policy. |
| **Community Design** | CD-I-54 | Design local streets not only to accommodate traffic, but also to serve as comfortable pedestrian environments. These should include, but not be limited to:<br>o Along Arterial, Parkway, and Collector Streets, street tree planting adjacent to curb between the street and sidewalk (the "parkway strip") to provide a buffer | **Yes:** The proposed Project roadway network has been designed to accommodate the traffic anticipated by the Project. The development |

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| | | between the pedestrian and the automobile, as well as in the landscaped buffer between the sidewalk and adjacent buildings/walls, where appropriate.<br>○ Along Local Streets, provide a landscape parkway between the curb and back of walk. Additionally, provide a street tree at the rate of one per single family dwelling unit or 30 feet for other uses. This street tree may be located either within the parkway, behind the sidewalk within the utility easement, or in the front yard setback at the choice of the developer or property owner.<br>○ Sidewalks on both sides of streets. | also includes 1.64 acres of trail area. The development is subject to City review/approval based on design standards set forth by the City's General Plan, Zoning Ordinance, Municipal Codes and Improvement Standards. The Project is required to adhere to this Implementing Policy. |
| **Community Design** | CD-I-55 | Promote use of design elements that signify neighborhood identity. | **Yes:** The Project provides a mix of housing types, street layouts, and recreational facilities that will enhance the neighborhood identity. The development is subject to City review/approval based on design standards set forth by the City's General Plan, Zoning Ordinance, Municipal Codes and Improvement Standards. The Project is required to adhere to this Implementing Policy. |
| **Community Design** | CD-I-56 | Include the following standards and regulations for fences and walls in residential areas in the Zoning Ordinance:<br>• Fences located in front yards shall be limited to no more than 3' in height with at least 50% permeability in front of the main building structure. Chain link fences shall be allowed in this area;<br>○ Fences along interior side or rear yards can be solid up to 7' so long as they are located behind the main building structure(s) along the property line of interior lots. | **Yes:** The development is subject to City review/approval based on design standards set forth by the City's General Plan, Zoning Ordinance, Municipal Codes and Improvement Standards. The Project is required to |

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| | | ○ Fences on corner lots can install solid architecturally detailed side yard fences taller than 3' once they are even or in back of the main structure and placed at least 3' behind the back sidewalk. Landscaping shall be required between the sidewalk and the fence and properly maintained by the owner. If proposed fencing placement would obstruct sight lines for vehicular traffic causing a hazardous traffic condition, the location must be altered. Chain link fence shall not be allowed in this area;<br>○ Properties that abut existing perimeter subdivision walls or fences facing public streets must use materials and height consistent with adjacent or abutting neighbors and get approval from the Planning Department prior to installation;<br>○ New single family subdivision shall only use decorative masonry perimeter walls/fences when abutting arterial streets, highways, commercial or industrial zone land, or areas where such installation is needed to adequately reduce noise impacts to acceptable levels;<br>○ Gated communities that restrict public access to multi-family and singlefamily residential areas are prohibited.<br>○ Trash containers shall be kept behind solid fences or landscaping to screen from public view, with appropriate access for cleaning and refuse removal. | adhere to this Implementing Policy. |
| **Community Design** | CD-I-57 | Require new developments to incorporate security and defensible space considerations in the design of residential units and neighborhoods. | **Yes:** The development is subject to City review/approval based on design standards set forth by the City's General Plan, Zoning Ordinance, Municipal Codes and Improvement Standards. The Project is required to adhere to this Implementing Policy. |

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| **Community Design** | CD-I-58 | Require new development to incorporate passive heating and natural lighting strategies if feasible and practical. These strategies should include, but are not limited to, the following:<br>○ Using building orientation, mass and form, including façade, roof, and choice of building materials, color, type of glazing, and insulation to minimize heat loss during winter months and heat gain during summer months;<br>○ Designing building openings to regulate internal climate and maximize natural lighting, while keeping glare to a minimum; and<br>○ Reducing heat-island effect of large concrete roofs and parking surfaces. | **Yes:** The development is subject to City review/approval based on design standards set forth by the City's General Plan, Zoning Ordinance, Municipal Codes and Improvement Standards. The Project is required to adhere to this Implementing Policy. |
| **Community Design** | CD-I-59 | Require new development to reduce storm water run-off, control water pollution, and promote water recharge through sustainable hydrological design. Measures should include, but are not limited to, the following:<br>○ Reducing imperviousness by limiting building footprint, using permeable paving or landscaping to break up expanses of impervious surfaces;<br>○ Using canopy trees or shrubs to absorb rainwater and slow water flow;<br>○ Removing curbs and gutters from streets and parking areas, where appropriate, to allow storm water sheet flow into vegetated areas;<br>○ Incorporating drainage design into the infrastructure, including roof downspouts, retention cells, or infiltration trenches, to filter and direct storm water into vegetated areas or water collection devices; and<br>○ Requiring the installation of sub-surface water retention facilities (for large development) to capture rainwater for use in landscape irrigation and nonpotable uses. | **Yes:** The Project has been designed to accommodate anticipated stormwater runoff from the Project site. A 4.39 acre basin will be installed at the southwest corner of the development and the internal storm drain system will be installed by the Project. The stormwater system is subject to City review/approval based on design standards set forth by the City's General Plan, Zoning Ordinance, Municipal Codes and Improvement Standards. The Project is required to adhere to this Implementing Policy. |
| **Community Design** | CD-I-60 | Incorporate green building standards into the Zoning Ordinance and building code to ensure a high level of energy efficiency in new development, retrofitting projects, and City facilities. These standards should include, but are not limited to, the following: | **Yes:** The Project includes energy efficient systems such as solar. The development is subject to |

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| | | ○ Require the use of Energy Star® appliances and equipment in new and substantial renovations of residential development, commercial development, and City facilities;<br>○ Require all new development incorporate green building methods to qualify for the equivalent of LEED Certified "Silver" rating or better (passive solar orientation must be a minimum component);<br>○ Require all new residential development to be pre-wired for optional photovoltaic energy systems and/or solar water heating on south facing roofs; and<br>○ Require all new projects that will use more than 40,000 kilowatt hours per year of electricity to install photovoltaic energy systems. | City review/approval based on design standards set forth by the City's General Plan, Zoning Ordinance, Municipal Codes and Improvement Standards. The Project is required to adhere to this Implementing Policy. |
| **Community Design** | CD-I-62 | Facilitate environmentally sensitive construction practices by:<br>○ Restricting use of chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs) and halons in mechanical equipment and building materials;<br>○ Promoting use of products that are durable and allow efficient end-of-life disposal (recyclable);<br>○ Requiring subdivision applications on sites greater than five acres to submit a construction waste management plan for City approval;<br>○ Promoting the purchase of locally or regionally available materials; and<br>○ Promoting the use of cost-effective design and construction strategies that reduce resource and environmental impacts. | **Yes:** The Project is required to submit a construction waste management plan for City approval. In addition, recycling and environmentally-conscious construction strategies will be implemented. The development is subject to City review/approval based on design standards set forth by the City's General Plan, Zoning Ordinance, Municipal Codes and Improvement Standards. The Project is required to adhere to this Implementing Policy. |
| **Circulation** | C-I-2 | Require all new developments to provide right-of-way and improvements consistent with the General Plan street designations and street cross-section standards. Further, | **Yes:** The development provides right-of-way and transportation |

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| | | ensure that either the City Capital Improvement Program Budget or new developments carries out the planned improvements included in Table 4.3. Alternative improvements shall be considered if supported by a traffic assessment conducted under the guidance of City staff. | improvements consistent with the City's General Plan. The development is subject to City review/approval based on design standards set forth by the City's General Plan, Zoning Ordinance, Municipal Codes and Improvement Standards. The Project is required to adhere to this Implementing Policy. |
| **Circulation** | C-1-3 | Provide for greater street connectivity by:<br>○ Incorporating in subdivision regulations requirements for a minimum number of access points to existing local or collector streets for each development (e.g. at least two access points for every 10 acres of development, with additional access, if warranted, for multi-family housing);<br>○ Encouraging the construction of roundabouts instead of traffic signals and 4- way stop signs, where feasible;<br>○ Requiring bicycle and pedestrian connections from cul-de-sacs to nearby public areas and main streets; and<br>○ Requiring new residential communities on undeveloped land planned for urban uses to provide stubs for future connections to the edge of the property line. Where stubs exist on adjacent properties, new streets within the development should connect to these stubs. | **Yes:** The site has been designed with seven points of ingress and egress. One of these points connects at W. Lacey Blvd along the northern edge of the Project; three access points connect at 18th Avenue on the western edge; two access points are along the southern edge; and one access point is along the eastern edge. The Project will be responsible for construction of internal roadways as well as for potential improvements to surrounding roadways to accommodate the Project. The development also includes pedestrian and bicycle paths within the site. In addition, traffic circles will be installed within the |

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| | | | development as a traffic calming measure. The development is subject to City review/approval based on design standards set forth by the City's General Plan, Zoning Ordinance, Municipal Codes and Improvement Standards. The Project is required to adhere to this Implementing Policy. |
| **Circulation** | C-I-5 | Use traffic calming measures to reduce speeds in existing and future residential areas. Traffic calming measures may include, but are not limited to:<br>○ Reducing curb-to-curb pavement widths to the minimum necessary to ensure traffic flow and safety;<br>○ Allowing on-street parking where possible;<br>○ Providing generous street tree plantings and other vegetation;<br>○ Building corner bulb-outs and intersection roundabouts;<br>○ Allowing for curvilinear street design; and<br>○ Installing, where appropriate, specific traffic calming features, such as bulb-outs and medians. | **Yes:** The Project is designed with short blocks, traffic calming features, curved roadways, and a trail system that is easy to navigate for both pedestrians and vehicle. On-street parking is available throughout the development. |
| **Circulation** | C-I-7 | Develop and manage the roadway system to obtain Level of Service (LOS) D or better for two hour peak periods (a.m. and p.m.) on all major roadways and arterial intersections in the City. This policy does not extend to local residential streets (i.e., streets with direct driveway access to homes) or state highways and their intersections, where Caltrans policies apply. Exceptions to LOS D policy may be allowed by the City Council in areas, such as Downtown, where allowing a lower LOS would result in clear public benefits, social interaction and economic vitality, and help reduce overall automobile use. | **Yes:** Under cumulative conditions (Year 2042), the only intersection that is projected to operate at an unacceptable LOS is the intersection of Liberty Drive and Hanford-Armona Road. However, mitigation measure TRA-1 will require the developer to improve the |

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| | | | intersection to maintain an acceptable LOS. |
| **Circulation** | C-I-8 | Develop and manage local residential streets (i.e., streets with direct driveway access to homes) to limit average daily vehicle traffic volumes to 1,100 or less and 85th percentile speeds to 25 miles per hour or less. | **Yes:** The Project is designed with short blocks, traffic calming features and curved roadways. Speed limits within the development will be limited to 25 MPH or less. |
| **Circulation** | C-I-10 | Require traffic impact studies for any proposed General Plan amendment that will generate significant amounts of traffic (such as 100 or more peak hour trips). | **Yes**: A Traffic Impact Study was prepared for the Project and is included in the Project EIR. |
| **Circulation** | C-I-13 | Continue to require that new development pay its fair share of the costs of street and other traffic improvements based on traffic generated and its impact on traffic service levels. | **Yes:** The Project is conditioned to pay its fair share of traffic improvements. A Traffic Impact Study was prepared for the Project and is included in the Project EIR. The required improvements are outlined in the Traffic Impact Study. |
| **Circulation (Public Transit)** | C-I-2 | Work with Kings Area Rural Transit to situate transit stops and hubs at locations that are convenient for transit users, and promote increased transit ridership through the provision of benches, bike racks on buses, and other amenities. | **Yes:** The development will include an area for a future bus bay. However, at this time, it is unlikely that KART will extend transit service to the site. |
| **Circulation (Public Transit)** | C-I-7 | Ensure that new development is designed to make public transit a viable choice for residents. Options include:<br>○ Locate medium-high density development whenever feasible near streets served by public transit; and | **Yes:** The nearest bus stops are located along E. Hanford Armona Road, approximately ¼ mile south of the development. |

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| | | ○ Link neighborhoods to bus stops by continuous sidewalks or pedestrian paths. | |
| **Circulation (Public Transit)** | C-I-2 | Establish bicycle lanes, bike routes, and bike paths consistent with the General Plan. | **Yes:** The Project includes bicycle lanes and pedestrian paths within the development. |
| **Circulation (Parking)** | C-I-1 | Ensure that all residential development provides adequate on-site parking for residents and guests | **Yes:** Adequate parking is provided for the multi-family component (on-site parking) and single family component (driveways and street parking). |
| **Parks, Schools and Public Facilities** | PSCF-I-1 | Establish a goal of 6 acres of parkland per thousand residents to be met by:<br>○ Dedication and reservation requirements consistent with the Quimby Act, for landscaped open spaces, parks, trail systems, and/or special community service facilities in new residential developments based on a standard of 5 acres of developed parkland per thousand residents; and<br>○ A standard of one acre per thousand residents to be met with an impact fee for City-owned and operated parks and special recreation areas that serve all residents. | **Yes:** The proposed Project includes four parks for a total of 7.98 acres and 1.64 acres of trail area. Since the Project does not include enough parkland to maintain the current park standard, the Project developer will also be required to pay in lieu fees, in compliance with the goals, policies, and implementation measures of the General Plan and Lemoore City Municipal Code Title 9, Chapter 7, Article N. Therefore, the Project will be in compliance with this policy. |

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| **Parks, Schools and Public Facilities** | PSCF-I-2 | Require that at least 75 percent of new residents live within a half mile or less of a public park facility, using the development permit review and approval processes | **Yes:** 100% of the Project residents will reside within ½ mile of a public park. There are multiple parks within the development. |
| **Parks, Schools and Public Facilities** | PSCF-I-4 | Develop new parks with high quality facilities, universal accessibility, durability and low maintenance in mind. Existing parks will be improved, if feasible and economically justified, to reduce maintenance cost and water use, as well as improve park safety and aesthetics. | **Yes:** The park facilities within the development will be universally accessible and will include durable facilities with low maintenance in mind. The park spaces will be developed in consultation with the City of Lemoore. |
| **Parks, Schools and Public Facilities** | PSCF-I-5 | Incorporate the following elements into the creation of new community, neighborhood, and pocket parks:<br>○ A mix of passive and active recreational facilities that meet the needs of citizens of all ages and interests;<br>○ Clear pedestrian and bike connectivity between parks and local schools, shops, and other neighborhood resources;<br>○ Visual permeability, so the interior of the park is visible from the street;<br>○ Parking, when necessary and appropriate, including use of on-street space in and around community and neighborhood parks;<br>○ Bicycle parking, storage, and other support facilities; and<br>○ Native, drought-tolerant landscaping and water-conserving irrigation systems including “smart” irrigation that utilizes moisture and weather sensor technology. | **Yes:** The Project includes a total of four parks for a total of 7.9 acres and 1.64 acres of trail area, as depicted on Figure 2-4: Site Plan. The 1.64 acres of trail area will be designated and zoned consistent with the designations and zoning of their adjacent parcels. The park spaces will be developed in consultation with the City of Lemoore and will include the elements described in PSCF-I-5. |
| **Parks, Schools and Public Facilities** | SN-G-5 | Maintain and enhance the City’s capacity for law enforcement, fire-fighting and emergency response. | **Yes:** The Project is required to pay impact fees for law enforcement, fire fighting and other emergency response. This |

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| | | | will maintain and/or enhance these services. |
| **Parks, Schools and Public Facilities** | SN-I-15 | Enforce the Uniform Fire Code for construction plans and final occupancy permits. | **Yes:** The Project is required to adhere to the Uniform Fire Code. |
| **Parks, Schools and Public Facilities** | SN-I-27 | Maintain Fire Department performance and response standards at Class 3 ISO rating or better, including building and staffing a new fire station in West Lemoore if necessary. | **Yes:** In order to maintain adequate levels of fire protection, the Lemoore Volunteer Fire Department will need to increase its resources to serve the Project. Based on the City's ration of 1.5 firefighters per thousand residents, the proposed Project would require an additional 3.8 firefighters at full buildout. The developer will be required to pay impact fees to maintain fire protection standards. |
| **Parks, Schools and Public Facilities** | SN-I-28 | Require adequate access for emergency vehicles in all new development, including adequate widths, turning radii, and vertical clearance on new streets. | **Yes:** Once constructed the proposed Project includes multiple access roads allowing adequate egress and ingress to the residential development in the event of an emergency. Additionally, as part of the proposed Project, internal access roadways would be constructed to City standards. The City has |

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| | | | reviewed the site layout and determined that the Project provides adequate emergency access. |
| **Public Utilities** | PU-I-2 | Provide and maintain a system of water supply distribution facilities capable of meeting existing and future daily and peak demands, including fire flow requirements, in a timely and cost effective manner | **Yes:** The Project will provide the necessary water supply distribution facilities within the development. The development is subject to City review/approval based on design standards set forth by the City's General Plan, Zoning Ordinance, Municipal Codes and Improvement Standards. The Project is required to adhere to this Implementing Policy. |
| **Public Utilities** | PU-I-5 | Require that necessary water supply infrastructure and storage facilities are in place concurrently with new development, and approve development plans only when a dependable and adequate water supply for the development is assured. | **Yes:** A Water Supply Assessment (WSA) was prepared and included in the Project EIR. Based on the WSA, the City has adequate water to serve the Project. The Project will provide the necessary water supply distribution facilities within the development. |
| **Public Utilities** | PU-I-6 | Require water meters in all new development. | **Yes:** The Project will install water meters for all connections within the development. |

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| **Public Utilities** | PU-I-8 | Require water bubblers for street trees, separate from surface irrigation used for turf. | **Yes:** The Project will install water bubblers for street trees, separate from surface irrigation used for turf. |
| **Public Utilities** | PU-I-10 | Require that developers of agricultural land to be annexed to the City offer the water rights associated with this land to the City. | **Yes:** Mitigation measure HYD -1 requires the developer to offer the City the water rights associated with the Project site. |
| **Public Utilities** | PU-I-15 | Maintain existing levels of wastewater service by expanding treatment plant and disposal facilities as required by growth and by the Regional Water Quality Control Board | **Yes:** The Project will not result in the need to expand the City's existing wastewater treatment plant. However, the Project is required to pay wastewater impact fees as determined by the City in order to maintain adequate wastewater service. |
| **Conservation and Open Space** | COS-I-1 | Protect lands designated for Agricultural/ Rural/ Conservation uses with appropriate zoning consistent with the General Plan. | **Yes:** Upon annexation, the Project site will be designated for residential and public land uses. The land use designations and zoning designations of the site will be consistent with the City's General Plan. |
| **Conservation and Open Space** | COS-I-4 | Promote use of native vegetation, drought tolerant plants, recycled water irrigation and other water-saving devices in City open spaces for ease of maintenance and environmental sustainability. | **Yes:** The Project includes public open spaces for parks and trails. The development is subject to City review/approval based on design standards set forth by the City's General Plan, |

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| | | | Zoning Ordinance, Municipal Codes and Improvement Standards. The Project is required to adhere to this Implementing Policy. |
| **Conservation and Open Space** | COS-I-6 | Require erosion and sedimentation plans for new development activities, including:<br>• The location and description of existing soil features and characteristics;<br>• The location and description of proposed changes to the site; and<br>• A schedule for the installation of control measures for each phase of development | **Yes:** The Project is required to prepare a Geotechnical Study prior to issuance of grading or building permits. This Study will include design provisions that will minimize erosion and sedimentation. In addition a SWPPP will be prepared for construction activities. |
| **Conservation and Open Space** | COS-I-8 | Require developers to prepare detailed stormwater run-off analyses and mitigation plans for any new development adjoining existing Prime Farmland, grassland or wetlands. | **Yes:** The Project has been designed to accommodate anticipated stormwater runoff from the Project site. A 4.39 acre basin will be installed at the southwest corner of the development and the internal storm drain system will be installed by the Project. The stormwater system is subject to City review/approval based on design standards set forth by the City's General Plan, Zoning Ordinance, Municipal Codes and Improvement Standards. |

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| | | | The Project is required to adhere to this Implementing Policy. |
| **Conservation and Open Space** | COS-I-9 | Require developers to inform subsequent buyers of potential continued agricultural production and the lawful use of agricultural chemicals, including pesticides and fertilizers adjacent to the new development site. | **Yes:** A "Right to Farm" acknowledgement will be required of all purchases within the Project of lots adjacent to farmland. |
| **Conservation and Open Space** | COS-I-10 | Require protection of sensitive habitat areas and "special status" species in new development in the following order: 1) avoidance; 2) onsite mitigation, and 3) offsite mitigation. Require assessments of biological resources prior to approval of any development within 300 feet of any creeks, sensitive habitat areas, or areas of potential sensitive status species. | **Yes:** A Biological Resource Evaluation (BRE) was conducted for the Project site. Although no protected species were identified during the site survey, the BRE includes protection measures for potential species that could occur on the site. These protection measures include pre-construction surveys, limits on the timing of construction, avoidance, off-site mitigation and steps to take if species are encountered during pre-construction surveys. |
| **Conservation and Open Space** | COS-I-12 | Require drainage basin buffers, maintenance of adequate water supply and reduced disturbance of the water table and wetlands systems. | **Yes:** The Project provides adequate drainage basin bufferage (the basin will be within a fenced area) and based on the Project's Water Supply Assessment, the City has adequate water to supply the Project. |

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| **Conservation and Open Space** | COS-I-13 | Establish a "no net loss" standard for sensitive habitat acreage, including wetlands and vernal pools potentially affected by development. | **Yes:** The Project includes off-site mitigation for loss of Swainson's Hawk foraging habitat. The final acreage associated with this mitigation will be determined by CA Department of Fish & Wildlife. There are no wetlands or vernal pools associated with the development. |
| **Conservation and Open Space** | COS-I-14 | Consult with trustee agencies (California Department of Fish and Game, U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, Environmental Protection Agency, and Regional Water Quality Control Board) during environmental review when special status species, sensitive natural communities, or wetlands or vernal pools may be adversely affected. | **Yes:** The Project EIR will be submitted to these agencies wherein they will have the opportunity to provide comments on the Project. In addition, the Project will consult with the Regional Water Quality Control Board and the US Army Corps of Engineers pertaining to piping of the irrigation canal associated with the development. |
| **Conservation and Open Space** | COS-I-15 | Prohibit the use of invasive plant species, such as Pampas grass, adjacent to wetlands and other sensitive habitat, where such landscaping could adversely impact wildlife habitat. | **Yes:** The Project will not install invasive species. The development is subject to City review/approval based on design standards set forth by the City's General Plan, Zoning Ordinance, Municipal Codes and Improvement Standards. The Project is required to adhere to this Implementing Policy. |

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| **Conservation and Open Space** | COS-I-20 | Require temporary on-site storm drainage basin in subdivisions and other development proposals, if needed, until storm drainage plans for that area are completed and formal connections are implemented. Design should take into consideration the properties of soils on the site. | **Yes:** The Project includes a 4.39 acre detention basin within the development. However, the developer will work with the City to determine if a temporary on-site storm drainage basin is needed prior to installation of the permanent basin. |
| **Conservation and Open Space** | COS-I-21 | Require developers to construct and maintain permanent water control facilities (storm water basins or retention ponds) for new development in the Westside and other areas deemed necessary by the City Engineer, to control storm water and protect areas from flooding. Facilities shall incorporate the following:<br>• A fenced "low-flow" area to contain potential contaminants;<br>• Regularly-tilled top soil to maintain good percolation;<br>• When feasible, storm drainage facilities to channel water into the re-created wetlands which currently lack sufficient water to survive; and<br>• Other design features consistent with the Regional Water Quality Control Board's Best Management Practices. | **Yes:** The Project includes a 4.39 acre detention basin within the development and will install a stormwater collection system within the development. The development is subject to City review/approval based on design standards set forth by the City's General Plan, Zoning Ordinance, Municipal Codes and Improvement Standards. The Project is required to adhere to this Implementing Policy. |
| **Conservation and Open Space** | COS-I-22 | Require on-site storm drainage to drain away from the streets in areas with no curbs and gutters. | **Yes:** The Project includes a 4.39 acre detention basin within the development and will install a stormwater collection system within the development. The development is subject to City review/approval based on design standards set forth by the |

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| | | | City's General Plan, Zoning Ordinance, Municipal Codes and Improvement Standards. The Project is required to adhere to this Implementing Policy. |
| **Conservation and Open Space** | COS-I-23 | Continue to prohibit septic tanks and drain fields to prevent pollution of subsurface water resources. | **Yes:** There are no septic tanks associated with this Project. |
| **Conservation and Open Space** | COS-I-33 | Require that new development analyze and avoid potential impacts to archaeological, paleontological, and historic resources by:<br>• Requiring a records review for development proposed in areas that are considered archaeologically or paleontologically sensitive;<br>• Determining the potential effects of development and construction on archeological or paleontological resources (as required by CEQA);<br>• Requiring pre-construction surveys and monitoring during any ground disturbance for all development in areas of historical and archaeological sensitivity; and<br>• Implementing appropriate measures to avoid the identified impacts, as conditions of project approval. | **Yes:** A Cultural Resources Survey and Report was prepared and included in the Project EIR. This included records searches, site surveys and report preparation. Based on the results of the Report, there are no known cultural, archaeological, paleontological or historic resources impacted by the Project. |
| **Conservation and Open Space** | COS-I-34 | If, prior to grading or construction activity, an area is determined to be sensitive for paleontological resources, retain a qualified paleontologist to recommend appropriate actions. Appropriate action may include avoidance, preservation in place, excavation, documentation, and/or data recovery, and shall always include preparation of a written report documenting the find and describing steps taken to evaluate and protect significant resources. | **Yes:** There is a possibility that future ground-disturbing activities could cause damage to, or destruction of, previously undiscovered paleontological resources or unique geologic features. Implementation of Mitigation Measure GEO-3 would reduce potential impacts to a less-than significant level. In addition, the Lemoore |

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| | | | General Plan policies and guidelines direct the City to require construction to stop immediately if paleontological resources are uncovered during grading or other onsite excavation activities, until appropriate mitigation is implemented. |
| **Conservation and Open Space** | COS-I-39 | Support State efforts to reduce greenhouse gases and emissions through local action that will reduce motor vehicle use, support alternative forms of transportation, require energy conservation in new construction, and energy management in public buildings. | **Yes:** An Air Quality / Greenhouse Gas / Energy Report was prepared for the Project. Based on the Report, the Project will have a less than significant impact on greenhouse gas emissions. The Project is required to adhere to adopted energy conservation strategies for new construction. |
| **Conservation and Open Space** | COS-I-42 | Conforming to the SJVAPCD Fugitive Dust Rule, require developers to use best management practices (BMPs) to reduce particulate emission as a condition of approval for subdivision maps, site plans and all grading permits. BMPs include:<br>○ During clearing, grading, earth-moving or excavation operations, fugitive dust emissions shall be controlled by regular watering, paving of construction roads, or other dust-preventive measures;<br>○ All materials excavated or graded shall be either sufficiently watered or covered by canvas or plastic sheeting to prevent excessive amounts of dust;<br>○ All materials transported off-site shall be either sufficiently watered or covered by canvas or plastic sheeting to prevent excessive amounts of dust;<br>○ All motorized vehicles shall have their tires watered before exiting a construction site; | **Yes:** The Project is required to adhere to the SJVAPCD Fugitive Dust Rule. This includes preparation of a Dust Control Plan. |

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| | | ○ The area disturbed by demolition, clearing, grading, earth-moving, or excavation shall be minimized at all times; and<br>○ All construction-related equipment shall be maintained in good working order to reduce exhaust. | |
| **Conservation and Open Space** | COS-I-45 | Utilize more plants and trees in public area landscaping, focusing on those that are documented as more efficient pollutant absorbers. | **Yes:** The Project includes public open spaces for parks and trails. The development is subject to City review/approval based on design standards set forth by the City's General Plan, Zoning Ordinance, Municipal Codes and Improvement Standards. The Project is required to adhere to this Implementing Policy. |
| **Safety and Noise** | SN-I-1 | Review proposed development sites at the earliest stage of the planning process to locate any potential geologic or seismic hazard. | **Yes:** The Project is required to prepare a Geotechnical Study prior to issuance of grading or building permits. This Study will include design provisions related to geologic or seismic hazards. There are no active faults in the vicinity of the Project site. |
| **Safety and Noise** | SN-I-2 | Maintain and enforce appropriate building standards and codes to avoid or reduce risks associated with geologic constraints and to ensure that all new construction is designed to meet current safety regulations. | **Yes:** The Project is required to prepare a Geotechnical Study prior to issuance of grading or building permits. This Study will include design provisions to meet current safety |

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| | | | regulations. |
| **Safety and Noise** | SN-1-5 | Require utilities be designed to withstand probable seismic forces to be encountered in Lemoore. | **Yes:** The Project is required to prepare a Geotechnical Study prior to issuance of grading or building permits. This Study will include design provisions for utilities. |
| **Safety and Noise** | SN-I-6 | Control erosion of graded areas with vegetation or other acceptable methods. | **Yes:** The Project is required to prepare a Geotechnical Study prior to issuance of grading or building permits. This Study will include design provisions to control erosion. |
| **Safety and Noise** | SN-I-8 | Require all new development within a flood zone to comply with the City's Flood Damage Prevention Ordinance | **Yes:** The Project site is located outside of an established flood zone. |
| **Safety and Noise** | SN-I-10 | Require new development to prepare hydrologic studies and implement appropriate mitigation measures to minimize surface water run-off and reduce the risk of flooding. | **Yes.** The Project has been designed to accommodate anticipated stormwater runoff from the Project site. A 4.39 acre basin will be installed at the southwest corner of the development and the internal storm drain system will be installed by the Project. The stormwater system is subject to City review/approval based on design standards set forth by the City's General Plan, Zoning Ordinance, Municipal Codes and |

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| | | | Improvement Standards. The Project is required to adhere to this Implementing Policy. |
| **Safety and Noise** | SN-I-11 | Require developers to provide for the ongoing maintenance of detention basins | **Yes:** The Project developers will provide for the ongoing maintenance of the on-site detention basin. |
| **Safety and Noise** | SN-I-19 | Require remediation and cleanup of sites contaminated with hazardous substances. | **Yes:** A plugged/abandoned oil/gas well is located on the Project site (abandoned in 1964). However, due to the fact that the well did not produce oil or gas, it is not expected to represent a significant environmental concern. The Project developer is required to follow CA Department of Conservation – Geologic Energy Management Division rules and regulations pertaining to any potential re-abandonment or cleanup associated with the well site. In addition, an area of the Project site revealed surface staining from a previous above ground diesel storage tank. This area will be excavated and removed from the site and disposed of. |

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| **Safety and Noise** | SN-I-32 | Use the community noise compatibility standards, shown in Table 8.6, as review criteria for new land uses. | **Yes:** A Noise Assessment was prepared for the Project and is included in the Project EIR. Based on the Assessment, the Project does not exceed the City's established noise thresholds and will be in compliance with City standards. |
| **Safety and Noise** | SN-I-33 | Consider an increase of five or more dBA to be "significant" if the resulting noise level would exceed that described as "normally acceptable" in Table 8.6. | **Yes:** A Noise Assessment was prepared for the Project and is included in the Project EIR. Based on the Assessment, the Project does not exceed the City's established noise thresholds and will be in compliance with City standards. |
| **Safety and Noise** | SN-I-35 | Require that all new residential development achieve noise level reductions to meet the land use compatibility standards through acoustical design and construction of the building elements:<br>• Residential building designs must be based upon a minimum interior design noise level reduction of 40 dB in all habitable areas (i.e., garages, storage areas, etc. are excepted). The 40 dB criteria must provide a minimum constructed noise level reduction of 35 dB; and<br>• • Residential building designs must also be based upon a minimum design noise level reduction of 45 dB in all bedrooms. The 45 dB criteria must provide a minimum constructed noise level reduction of 40 dB. | **Yes:** A Noise Assessment was prepared for the Project and is included in the Project EIR. Based on the Assessment, the Project does not exceed the City's established noise thresholds and will be in compliance with City standards. |
| **Safety and Noise** | SN-I-37 | Prohibit construction materials and methods that do not provide enough noise insulation to ensure compliance with compatibility standards, including:<br>• Facades using aluminum, vinyl or other exterior siding weighing less than 5 psf; | **Yes:** A Noise Assessment was prepared for the Project and is included in the Project EIR. Based on the Assessment, the Project does not exceed the City's established |

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| | | • Façade construction without insulation;<br>• Flat roofs without an interstitial cavity space or with a space less than 10 inches (i.e., no monolithic T&G roof/ceiling systems);<br>• Jalousie or other lightweight or poor-sealing window systems; and<br>• Packaged terminal air-conditioning (PTAC) units (i.e., through-the-wall air-conditioning). | noise thresholds and will be in compliance with City standards. |
| **Safety and Noise** | SN-I-43 | Require new noise sources to use best available control technology (BACT) to minimize noise emissions. | **Yes:** The Project is a residential development. Noise emitting equipment will be utilized during construction, however, these will be temporary uses (during construction) and the construction contractor will be required to adhere to the City's noise standards for hours of operation and noise attenuating technologies or methods. On-going sources of noise from the development consist primarily of traffic noise and typical noise from residential neighborhoods (lawn mowers, music, TVs, voices, air conditioners, etc.). A Noise Assessment was prepared for the Project and is included in |

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| --- | --- | --- | --- |
| | | | the Project EIR. Based on the Assessment, the Project does not exceed the City's established noise thresholds and will be in compliance with City standards. |

The proposed Project is an appropriate use for the site, and as demonstrated in Table 3.10-2, once annexed into the City, the Project will be consistent with the applicable objectives, goals and policies outlined in the City of Lemoore General Plan. Implementation of these policies and measures will ensure that impacts remain ***less than significant.***

**Mitigation Measures**

None are required.

**Cumulative Impacts**

**Less Than Cumulatively Considerable.** The geographic area of this cumulative analysis is the areas covered by the City of Lemoore General Plan. As discussed above, the Project does not divide an existing community.

The anticipated impacts of the project in conjunction with cumulative development in the area of the project would increase urbanization and result in the loss of open space and agricultural lands. Potential land use impacts require evaluation on a case-by-case basis because of the interactive effects of a specific development and its immediate environment. As described in Table 3.10-2, the Project would be consistent with the goals and policies of the Lemoore General Plan. In addition, with approval of all discretionary actions, the Project would be a permitted use that would not conflict with the land use designation or zone classification for the sites. Therefore, the Project would not result in a cumulatively considerable impact regarding land use.

All related projects would be required to undergo environmental review, in accordance with the requirements of CEQA. Like the proposed Project, each related project would also be required to demonstrate consistency with all applicable planning documents governing the project site, including the KCGP, applicable specific plans and the Lemoore Zoning Ordinance. Should

potential impacts be identified, appropriate mitigation would be prescribed in order to reduce potential impacts to less-than-significant levels.

As such, the Project will not result in project-specific impacts and therefore, the proposed Project's incremental contribution would be ***less than cumulatively considerable.***

# 3.11 Noise

This section evaluates the potential for noise and groundborne vibration impacts resulting from implementation of the proposed Project. This includes the potential for the proposed Project to result in impacts associated with a substantial temporary and/or permanent increase in ambient noise levels in the vicinity of the Project site; exposure of people in the vicinity of the Project site to excessive noise levels, groundborne vibration, or groundborne noise levels; and whether this exposure is in excess of standards established in the local general plan or noise ordinance. The data utilized for analysis of this section is based, in part, on the Environmental Noise Assessment prepared for this Project by WJV Acoustics (Appendix G).

Fundamentals of Sound and Environmental Noise

Sound is technically described in terms of amplitude (loudness) and frequency (pitch). The standard unit of sound amplitude measurement is the decibel (dB). The decibel scale is a logarithmic scale that describes the physical intensity of the pressure vibrations that make up any sound. The pitch of the sound is related to the frequency of the pressure vibration. Since the human ear is not equally sensitive to a given sound level at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) provides this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear.

Noise, on the other hand, is typically defined as unwanted sound. A typical noise environment consists of a base of steady ambient noise that is the sum of many distant and indistinguishable noise sources. Superimposed on this background noise is the sound from individual local sources. These can vary from an occasional aircraft or train passing by to virtually continuous noise from, for example, traffic on a major highway. Table 3.11-1, Representative Environmental Noise Levels, illustrates representative noise levels in the environment.

**Table 3.11-1**
**Representative Environmental Noise Levels**

| Common Outdoor Activities | Noise Level (dBA) | Common Indoor Activities |
|---|---|---|
| | —110— | Rock Band |
| Jet Fly-over at 100 feet | | |
| | —100— | |
| Gas Lawnmower at 3 feet | | |
| | —90— | |
| | | Food Blender at 3 feet |
| Diesel Truck going 50 mph at 50 feet | —80— | Garbage Disposal at 3 feet |
| Noisy Urban Area during Daytime | | |
| Gas Lawnmower at 100 feet | —70— | Vacuum Cleaner at 10 feet |
| Commercial Area | | Normal Speech at 3 feet |
| Heavy Traffic at 300 feet | —60— | |
| | | Large Business Office |
| Quiet Urban Area during Daytime | —50— | Dishwasher in Next Room |
| | | |
| Quiet Urban Area during Nighttime | —40— | Theater, Large Conference Room (background) |
| Quiet Suburban Area during Nighttime | | |
| | —30— | Library |
| Quiet Rural Area during Nighttime | | Bedroom at Night, Concert Hall (background) |
| | —20— | |
| | | Broadcast/Recording Studio |
| | —10— | |
| | | |
| Lowest Threshold of Human Hearing | —0— | Lowest Threshold of Human Hearing |

*Source: California Department of Transportation, Technical Noise Supplement, October 1998.*

Several rating scales have been developed to analyze the adverse effect of community noise on people. Since environmental noise fluctuates over time, these scales consider that the effect of noise upon people is largely dependent upon the total acoustical energy content of the noise, as well as the time of day when the noise occurs. Those that are applicable to this analysis are as follows:

- $L_{eq}$ – An $L_{eq}$, or equivalent energy noise level, is the average acoustic energy content of noise for a stated period of time. Thus, the $L_{eq}$ of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
- $L_{max}$ – The maximum instantaneous noise level experienced during a given period of time.
- $L_{min}$ – The minimum instantaneous noise level experienced during a given period of time.
- $L_{dn}$ – The Day-Night Average Level, is a 24-hour average $L_{eq}$ with a 10 dBA "weighting" added to noise during the hours of 10:00 P.M. to 7:00 A.M. to account for noise sensitivity

in the nighttime. The logarithmic effect of these additions is that a 60 dBA 24 hour $L_{eq}$ would result in a measurement of 66.4 dBA $L_{dn}$.

- CNEL – The Community Noise Equivalent Level is a 24-hour average $L_{eq}$ with a 5 dBA "weighting" during the hours of 7:00 P.M. to 10:00 P.M. and a 10 dBA "weighting" added to noise during the hours of 10:00 P.M. to 7:00 A.M. to account for noise sensitivity in the evening and nighttime, respectively. The logarithmic effect of these additions is that a 60 dBA 24 hour $L_{eq}$ would result in a measurement of 66.7 dBA CNEL.

Noise environments and consequences of human activities are usually well represented by median noise levels during the day, night, or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL is below 60 dBA, moderate in the 60–70 dBA range, and high above 70 dBA. Noise levels greater than 85 dBA can cause temporary or permanent hearing loss. Examples of low daytime levels are isolated, natural settings with noise levels as low as 20 dBA and quiet suburban residential streets with noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate level noise environments are urban residential or semi-commercial areas (typically 55–60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with noisier urban residential or residential-commercial areas (60–75 dBA) or dense urban or industrial areas (65–80 dBA).

Under controlled conditions, in an acoustics laboratory, the trained (enhanced listening abilities) healthy human ear is able to discern changes in sound levels of 1 dBA, when exposed to steady, single frequency "pure tone" signals in the mid-frequency range. Outside of such controlled conditions, the trained ear can detect changes of 2 dBA in normal environmental noise. It is widely accepted that in the community noise environment the average healthy ear can barely perceive CNEL noise level changes of 3 dBA. CNEL changes from 3 to 5 dBA may be noticed by some individuals who are extremely sensitive to changes in noise. A 5 dBA CNEL increase is readily noticeable, while the human ear perceives a 10 dBA CNEL increase as a doubling of sound.

Noise levels from a particular source generally decline as distance to the receptor increases. Other factors, such as the weather and reflecting or barriers, also help intensify or reduce the noise level at any given location. A commonly used rule of thumb for roadway noise is that for every doubling of distance from the source, the noise level is reduced by about 3 dBA at acoustically "hard" locations (i.e., the area between the noise source and the receptor is nearly complete asphalt, concrete, hard-packed soil, or other solid materials) and 4.5 dBA at acoustically "soft" locations (i.e., the area between the source and receptor is normal earth or has vegetation,

including grass). Noise from stationary or point sources is reduced by about 6 to 7.5 dBA for every doubling of distance at acoustically hard and soft locations, respectively. Noise levels are also generally reduced by 1 dBA for each 1,000 feet of distance due to air absorption. Noise levels may also be reduced by intervening structures – generally, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm reduces noise levels by 5 to 10 dBA. The normal noise attenuation within residential structures with open windows is about 17 dBA, while the noise attenuation with closed windows is about 25 dBA.[1]

Fundamentals of Environmental Groundborne Vibration

Vibration is sound radiated through the ground. Vibration can result from a source (e.g., train operations, motor vehicles, machinery equipment, etc.) causing the adjacent ground to move, thereby, creating vibration waves that propagate through the soil to the foundations of nearby buildings. This effect is referred to as groundborne vibration. The peak particle velocity (PPV) or the root mean square (RMS) velocity is usually used to describe vibration levels. PPV is defined as the maximum instantaneous peak of the vibration level, while RMS is defined as the square root of the average of the squared amplitude of the level. PPV is typically used for evaluating potential building damage, while RMS velocity in decibels (VdB) is typically more suitable for evaluating human response.

The background vibration velocity level in residential areas is usually around 50 VdB. The vibration velocity level threshold of perception for humans is approximately 65 VdB. A vibration velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for many people. Most perceptible indoor vibration is caused by sources within buildings, such as the operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration from traffic is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings.

The general human response to different levels of groundborne vibration velocity levels is described in Table 3.11-2, Human Response to Different Levels of Groundborne Vibration.

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[1] National Cooperative Highway Research Program Report 117, Highway Noise: A Design Guide for Highway Engineers, 1971.

**Table 3.11-2**
**Human Response to Different Levels of Groundborne Vibration**

| Vibration Velocity Level | Human Reaction |
|---|---|
| 65 VdB | Approximate threshold of perception for many people. |
| 75 VdB | Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable. |
| 85 VdB | Vibration acceptable only if there are an infrequent number of events per day. |

*Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006.*

## Environmental Setting

Study Area

The Project is located on approximately 156 acres immediately north of the City of Lemoore and is bounded by West Lacey Boulevard to the north and 18$^{th}$ Avenue to the west. The area is dominated by farmland, agricultural operations and scattered rural residential housing to the north, east and west, and residential development to the south. The site is currently being farmed for alfalfa.

Sensitive receptors located in the Project vicinity include the residential neighborhood immediately south of the proposed Project site.

There is no public or private airstrip within two miles of the Project site.

Major roads in the Project area include:

**State Route (SR) 41** is an existing north-south two- to four-lane expressway adjacent to the proposed Project. SR 41 serves as the principal connection to various metropolitan areas within the Central San Joaquin Valley and the California Central Coast. In this area, SR 41 connects to Hanford- Armona Road.

**19th Avenue** is an existing north-south two-lane arterial divided by a two-way left-turn lane in the vicinity of the proposed Project. In this area, 19th Avenue is a two-lane arterial divided by a two-way left-turn lane between Hanford-Armona Road and Noble Street and a two-lane undivided arterial between Noble Street and Cinnamon Drive. The City General Plan intends to extend 19th Avenue north of Hanford-Armona Road as a two-lane collector connecting to Lemoore Avenue and designates 19th Avenue as a four-lane arterial between Hanford-Armona Road and Idaho Avenue.

**Liberty Drive (18 ¾ Avenue)** is an existing north-south undivided two-lane local roadway in the vicinity of the proposed Project. In this area, Liberty Drive is an undivided two-lane local roadway between Lacey Boulevard and Hanford-Armona Road and a two-lane collector divided by a two-way left-turn lane between Hanford-Armona Road and Cinnamon Drive. The City General Plan designates Liberty Drive as a four-lane collector between Lacey Boulevard and Cinnamon Drive.

**Lemoore Avenue** is an existing north-south undivided two-lane local roadway adjacent to the proposed Project. In this area, Lemoore Avenue is a two-lane undivided arterial north of Glendale Avenue and a two-lane arterial divided by a two-way left-turn lane between Glendale Avenue and Cinnamon Drive. The City General Plan designates Lemoore Avenue as an arterial north of Hanford-Armona Road and a four-lane arterial between Hanford Armona Road and Cinnamon Drive.

**17th Avenue** is an existing north-south undivided two-lane local roadway in the vicinity of the proposed Project. In this area, 17th Avenue is an undivided local roadway that runs through the City of Lemoore SOI. The City General Plan designates 17th Avenue as a two-lane local roadway throughout the City of Lemoore SOI.

**Cinnamon Drive** is an existing two-lane undivided collector in the vicinity of the proposed Project. In this area, Cinnamon Drive extends east of its connection to 19½ Avenue and changes orientation to intersect Hanford-Armona Road. Cinnamon Drive is a two-lane collector divided by a two-way left-turn lane between 19½ Avenue and Lemoore Avenue and a two-lane undivided collector east of Lemoore Avenue and south of Hanford-Armona Road. The City General Plan designates Cinnamon Drive as a four-lane collector between 19 ½ Avenue and Lemoore Avenue and a two-lane collector between Lemoore Avenue and Hanford-Armona Road.

**Lacey Boulevard** is an existing east-west two-lane local roadway adjacent to the proposed Project. In this area, Lacey Boulevard is a two-lane undivided major collector through the County of Kings. The County of Kings 2035 General Plan designates Lacey Boulevard as a local major collector.

**Glendale Avenue** is an existing east-west two-lane undivided local roadway in the vicinity of the proposed Project. In this area, Glendale Avenue is a two-lane undivided local roadway that exists between Deodar Drive and Quandt Drive. The City General Plan designates Glendale Avenue as a local roadway.

**Spruce Avenue** is an existing east-west two-lane undivided local roadway in the vicinity of the proposed Project. In this area, Spruce Avenue is a two-lane undivided local roadway that exists between Spring Lane and Ashland Drive. The City General Plan designates Spruce Avenue as a local roadway.

**Hanford-Armona Road** is an existing east-west two-lane arterial in the vicinity of the proposed Project. In this area, Hanford-Armona Road is a two-lane undivided local roadway west of SR 41, a two- to three-lane arterial divided by a two-way left-turn lane between SR 41 and Lemoore Avenue, a four-lane undivided arterial between Lemoore Avenue and Cinnamon Drive and a two-lane undivided arterial east of Cinnamon Drive. The City General Plan designates Hanford-Armona Road as a four- to six-lane arterial between College Drive and Bennington Avenue.

**San Joaquin Valley Railroad**

The San Joaquin Railroad provides east-west train services on land owned by Union Pacific Railroad on an average of two trips a day. The trains generally travel with speeds ranging from 10 to 40 miles per hour, depending if they make a stop in Lemoore on that particular trip. The trains currently stop on-demand only, providing service for industrial and agricultural shippers in the City. The railroad tracks are located approximately 1.1 miles south of the Project.

**Aircraft Noise from Naval Air Station- Lemoore**

Naval Air Station- Lemoore (NASL) boundary is located approximately 7 miles to the west of the Project. One of the principal concerns of airport land use planning is noise compatibility–or minimizing the effects of aircraft noise on communities adjacent to airports and preventing incompatible land use development in areas adjacent to airports.

To minimize noise conflicts, the City has taken steps to ensure appropriate noise mitigation measures are in place before allowing development, including measures such as the noise level reduction (NLR) criteria in AICUZ instructions11. The UGB stops development at 21st Avenue, and in addition to UGB restrictions, the recreated wetlands located west of the 21st Avenue/Marsh Drive will help provide a permanent buffer between the City and the base.

## Regulatory Setting

<u>Federal Regulations</u>

*Noise Standards*

There are no federal noise standards that directly regulate environmental noise related to the construction or operation of the proposed Project. With regard to noise exposure and workers, the Office of Safety and Health Administration (OSHA) regulations safeguard the hearing of workers exposed to occupational noise.

*Vibration Standards*

The Federal Transit Administration (FTA) has adopted vibration standards that are used to evaluate potential building damage impacts related to construction activities. The vibration damage criteria adopted by the FTA are shown in Table 3.11-3, Construction Vibration Damage Criteria.

**Table 3.11-3**
**Construction Vibration Damage Criteria**

| Building Category | PPV (in/sec) |
|---|---|
| I. Reinforced-concrete, steel or timber (no plaster) | 0.5 |
| II. Engineered concrete and masonry (no plaster) | 0.3 |
| III. Non-engineered timber and masonry buildings | 0.2 |
| IV. Buildings extremely susceptible to vibration damage | 0.12 |
| *Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006.* | |

In addition, the FTA has also adopted standards associated with human annoyance for groundborne vibration impacts for the following three land-use categories: (1) Vibration Category 1 – High Sensitivity, (2) Vibration Category 2 – Residential, and (3) Vibration Category 3 – Institutional. The FTA defines Category 1 as buildings where vibration would interfere with operations within the building, including vibration-sensitive research and manufacturing facilities, hospitals with vibration-sensitive equipment, and university research operations. Vibration-sensitive equipment includes, but is not limited to, electron microscopes, high-resolution lithographic equipment, and normal optical microscopes. Category 2 refers to all residential land uses and any buildings where people sleep, such as hotels and hospitals. Category 3 refers to institutional land uses such as schools, churches, other institutions, and quiet offices that do not have vibration-sensitive equipment, but still have the potential for activity interference.

Under conditions where there are an infrequent number of events per day[2], the FTA has established thresholds of 65 VdB for Category 1 buildings, 80 VdB for Category 2 buildings, and 83 VdB for Category 3 buildings.

Under conditions where there are an occasional number of events per day[3], the FTA has established thresholds of 65 VdB for Category 1 buildings, 75 VdB for Category 2 buildings, and 78 VdB for Category 3 buildings. No thresholds have been adopted or recommended for commercial, office, and industrial uses.

<u>State of California Regulations</u>

*California Government Code*

California Government Code Section 65302(f) mandates that the legislative body of each county and city adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines established by the State Department of Health Services as shown in Table 3.11-4, California Land Use Compatibility Noise Guidelines.

The guidelines rank noise/land use compatibility in terms of "normally acceptable," "conditionally acceptable" and "clearly unacceptable" noise levels for various land use types. Single-family homes are "normally acceptable" in exterior noise environments up to 60 CNEL and "conditionally acceptable" up to 70 CNEL. Multiple-family residential uses are "normally acceptable" up to 65 CNEL and "conditionally acceptable" up to 70 CNEL. Schools, libraries, and churches are "normally acceptable" up to 70 CNEL, as are office buildings and business, commercial, and professional uses.

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[2] The Federal Transit Administration, Transit Noise and Vibration Impact Assessment (May 2006) defines "Infrequent Events" as "fewer than 30 vibration events of the same kind per day." Page 8-3. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_Manual.pdf. Accessed October 2020.

[3] The Federal Transit Administration, Transit Noise and Vibration Impact Assessment (May 2006) defines "Occasional Events" as "between 30 and 70 vibration events of the same source per day." Page 8-3. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_Manual.pdf. Accessed October 2020.

**Table 3.11-4**
**California Land Use Compatibility Noise Guidelines**

| Land Use Category | Community Noise Exposure (dBA CNEL) | | | |
|---|---|---|---|---|
| | Normally Acceptable | Conditionally Acceptable | Normally Unacceptable | Clearly Unacceptable |
| Residential – Low Density, Single-Family, Duplex, Mobile Homes | 50 - 60 | 55 - 70 | 70 – 75 | 75 – 85 |
| Residential – Multiple Family | 50 - 65 | 60 - 70 | 70 – 75 | 70 – 85 |
| Playgrounds, Neighborhood Parks | 50 - 70 | NA | 67.5 – 75 | 72.5 – 85 |

*California State Building Code*

The State Building Code, Title 24, Part 2 of the State of California Code of Regulations establishes uniform minimum noise insulation performance standards to protect persons within new buildings which house people, including hotels, motels, dormitories, apartment houses and dwellings other than single-family dwellings. Title 24 mandates that interior noise levels attributable to exterior sources shall not exceed 45 dB $L_{dn}$ or CNEL in any habitable room.

Title 24 also mandates that for structures containing noise-sensitive uses to be located where the $L_{dn}$ or CNEL exceeds 60 dB, an acoustical analysis must be prepared to identify mechanisms for limiting exterior noise to the prescribed allowable interior levels. If the interior allowable noise levels are met by requiring that windows be kept closed, the design for the structure must also specify a ventilation or air conditioning system to provide a habitable interior environment.

Local Regulations

The following lists foals and policies from the City General Plan pertaining to noise that are applicable to the proposed Project.

**SN-G-6** Stive to achieve an acceptable noise environment for present and future residents of Lemoore.

**SN-G-6** Ensure new development is compatible with the noise environment.

**SN-I-35** Require that all new residential development achieve noise level reductions to meet the land use compatibility standards through acoustical design and construction of the building elements:

- Residential building designs must be based upon a minimum interior design noise level reduction of 40 dB in all habitable areas (i.e., garages, storage areas, etc. are expected). The 40 dB criteria must provide a minimum constructed noise level reduction of 35dB; and
- Residential building designs must also be based upon a minimum design noise level reduction of 45dB in all bedroom. The 45 dB criteria must provide a minimum constructed noise level reduction of 40dB.

**SN-I-37** Prohibit construction materials and methods that do not provide enough noise insulation to ensure compliance with compatibility standards, including:

- Facades using aluminum, vinyl or other exterior siding weighing less than 5 psf;
- Façade construction without insulation;
- Flat roofs without an interstitial cavity space or with a space less than 10 inches (i.e., no monolithic T&G roof/ceiling systems);
- Jalousie or other lightweight or poor-sealing window systems; and
- Packaged terminal air-conditioning (PTAC) units (i.e., through-the-wall air-conditioning).

**SN-I-43** Require new noise sources to use best available control technology (BACT) to minimize noise emissions.

*City of Lemoore Municipal Code*

Section 9-5B-2 (Noise, Odor and Vibration Performance Standards) of The City of Lemoore Municipal Code2 provides additional exterior and interior noise level standards. The Municipal Code sets noise compatibility standards in terms of the Community Noise Equivalent Level (CNEL). Both the Ldn and CNEL represent the time-weighted energy average noise level for a 24- hour day, with a 10 dB penalty added to noise levels occurring during the nighttime hours (10:00 p.m.-7:00 a.m.). The CNEL includes an additional penalty of 5 dB (technically 4.77 dB) that is added to noise levels occurring during the evening hours between 7:00 p.m. and 10:00 p.m.

*Construction*

Limitation On Hours of Construction: To ensure that nearby residents as well as nonresidential activities are not disturbed by noise from early morning or late night activities, the following limits on construction are established:

- Monday through Saturday, seven o'clock (7:00) A.M. to eight o'clock (8:00) P.M.
- Extended construction hours may only be allowed by the review authority through conditions of approval between eight o'clock (8:00) P.M. and ten o'clock (10:00) P.M.
- On Sundays and national holidays, construction activities may only be allowed by the review authority through conditions of approval between nine o'clock (9:00) A.M. and five o'clock (5:00) P.M.

*Vibration*

Vibration Standards: Uses that generate vibrations that may be considered a nuisance or hazard on any adjacent property shall be cushioned or isolated to prevent generation of vibrations. Uses shall be operated in compliance with the following provisions:

- Uses shall not generate ground vibration that is perceptible without instruments by the average person at any point along or beyond the property line of the parcel containing the activities;
- Uses, activities, and processes shall not generate vibrations that cause discomfort or annoyance to reasonable persons of normal sensitivity or which endanger the comfort, repose, health, or peace of residents whose properties abut the property lines of the subject parcel;
- Uses shall not generate ground vibration that interferes with the operations of equipment and facilities of adjoining parcels; and
- Vibrations from temporary construction/demolition and vehicles that leave the subject parcel (e.g., trucks, trains, and aircraft) are exempt from the provisions of this section. (Ord. 2013-05, 2-6-2014).

*Air Installations Compatible Use Zones Report (AICUZ)*

This document identifies issues that may occur as the civilian population moves in closer contact with Naval Air Station Lemoore (NASL), its noise footprint, and aircraft flight tracks. The Air Installations Compatible Use Zones (AICUZ) Program helps guide a variety of planning efforts seeking to provide smart growth opportunities in the San Joaquin Valley and avoid conflict with current and future military operations. The AICUZ Program recommends community land uses compatible with noise levels, accident potential, and flight clearance requirements associated with military airfield operations in the hope that the information will be incorporated into local, county, and regional planning programs.

## Thresholds of Significance

In accordance with Appendix G to the State CEQA Guidelines, the Project would have a significant impact on noise if it would cause any of the following conditions to occur:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
- Generation of excessive groundborne vibration or groundborne noise levels?
- For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

CEQA does not define what constitutes a substantial increase in noise levels. Some guidance is provided by the 1992 findings of the Federal Interagency Committee on Noise (FICON), which assessed changes in ambient noise levels resulting from aircraft operations. The FICON recommendations are based upon studies that relate aircraft and traffic noise levels to the percentage of persons highly annoyed by the noise. The rationale for the FICON recommendations is that it is possible to consistently describe the annoyance of people exposed to transportation noise in terms of the DNL (or CNEL). Annoyance is a summary measure of the general adverse reaction of people to noise that results in speech interference, sleep disturbance, or interference with other daily activities. The City also provides noise and vibration thresholds in the General Plan and Municipal Code.

## Impacts and Mitigation Measures

**Impact 3.11-1:** *Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

Existing noise levels in the Project vicinity are dominated by traffic noise along West Lacey Boulevard and 18th Street. Additional sources of noise in the Project vicinity include occasional aircraft overflights (including aircraft associated with the NASL, noise associated with agricultural activities and noise associated with residential activities (barking dogs, voices, landscaping activities, etc.).

Long-term (24-hour) ambient noise level measurements were conducted at one (1) location (site LT-1). Ambient noise levels were measured for a period of 24 continuous hours at site LT-1. Site LT-1 was located in the southwest portion of the Project site, adjacent to the City-owned enclosed parcel and in the vicinity of residential land uses to the south. The noise monitoring site was exposed to traffic noise associated with vehicles on 18$^{th}$ Avenue as well as activities occurring within the City-owned parcel. The location of the long-term measurement site is provided on Figure 3.11-1.

Measured hourly energy average noise levels (Leq) at site LT-1 ranged from a low of 54.6 dB between 2:00 a.m. and 3:00 a.m. to a high of 59.1 dBA between 3:00 p.m. and 4:00 p.m. Hourly maximum (Lmax) noise levels at site LT-1 ranged from 59.8 to 75.5 dBA. Residual noise levels at the monitoring site, as defined by the L90, ranged from 52.0 to 56.4 dBA. The L90 is a statistical descriptor that defines the noise level exceeded 90% of the time during each hour of the sample period. The L90 is generally considered to represent the residual (or background) noise level in the absence of identifiable single noise events from traffic, aircraft and other local noise sources. The measured Ldn value at site LT-1 for the 24-hour measurement period was 61.8 dB Ldn.

Additionally, short-term (15-minute) ambient noise level measurements were conducted at four (4) locations (Sites ST-1 through ST-4).

Two (2) individual measurements were taken at each of the four short-term sites to quantify ambient noise levels in the morning and afternoon hours. The locations of the long-term and short-term noise monitoring sites are shown as Figure 3.11-1.

Short-term noise measurements were conducted for 15-minute periods at each of the four sites. Site ST-1 was located near residential land uses south of the project site, near Glendale Avenue and Quandt Drive, and was exposed to noise associated with roadway traffic and residential

activities. Site ST-2 was located along the western portion of the project site, along 18th Street, and was exposed to noise associated with roadway traffic and agricultural activities. Site ST-3 was located along the northern portion of the project site, along West Lacey Boulevard, and was exposed to noise associated with roadway traffic and agricultural activities. Site ST-4 was located within the residential area south of the project site near the southeastern portion of the Project site, along Ashland Drive, and was exposed to noise associated with roadway traffic and residential activities. Short term noise measurements are provided in Table V of Appendix G.

**Figure 3.11-1**
**Project Vicinity and Ambient Noise Monitoring Sites**

Construction Noise Impacts

**Less Than Significant With Mitigation.** Construction noise would occur at various locations within the project site through the buildout period. Existing sensitive receptors could be located as close as 100 feet from construction activities. Table 3.11-4 provides typical construction-related noise levels at distances of 100 feet, 200 feet, and 300 feet.

Construction noise is not considered to be a significant impact if construction is limited to the allowed hours and construction equipment is adequately maintained and muffled. Extraordinary noise-producing activities (e.g., pile driving) are not anticipated. The City limits hours of construction to occur only between the hours of 7:00 a.m. to 8:00 p.m., Monday through Saturday. Construction activities outside of these hours, as well as Sundays and holidays, may only be allowed by the review authority through conditions of approval. Construction noise impacts could result in annoyance or sleep disruption for nearby residents if nighttime operations were to occur or if equipment is not properly muffled or maintained.

Table 3.11-5 provides typical construction-related noise levels at distances of 100 feet, 200 feet, and 300 feet.

**Table 3.11-5**
**Typical Construction Equipment[4]**

| Type of Equipment | 100 Ft. | 200 Ft. | 300 Ft. |
|---|---|---|---|
| Concrete Saw | 84 | 78 | 74 |
| Crane | 75 | 69 | 65 |
| Excavator | 75 | 69 | 65 |
| Front End Loader | 73 | 67 | 63 |
| Jackhammer | 83 | 77 | 73 |
| Paver | 71 | 65 | 61 |
| Pneumatic Tools | 79 | 73 | 69 |
| Dozer | 76 | 70 | 66 |
| Rollers | 74 | 68 | 64 |
| Scrapers | 81 | 75 | 71 |
| Portable Generators | 74 | 68 | 64 |
| Backhoe | 80 | 74 | 70 |
| Grader | 80 | 74 | 70 |

During the construction of the proposed Project, construction activities have the potential to impact noise sensitive land uses in the immediate vicinity. Mitigation Measure NOI- 1 requires that construction equipment have noise control devices installed, stationary construction equipment, staging and laydown areas are placed to direct noise away from sensitive receptors, and that trucks do not idle more than 5 minutes. NOI-2 requires that signs displaying hours of construction activities and the contact information of a designated noise disturbance coordinator be posted.

[4] Noise Assessment for the Lacey Ranch Master Plan prepared by WJV Acoustics. June 2021. Appendix G. Page 14.

Implementation of Mitigation Measures NOI-1 and NOI2 would ensure compliance with the City noise standards. As a result, construction-related noise impacts of the Project are ***less than significant.***

Long-Term Operational Traffic Noise Impacts

**Less Than Significant.** The Federal Highway Administration (FHWA) Traffic Noise Model was utilized to quantify expected Project-related increases in traffic noise exposure along roadways in the project vicinity. The FHWA Model is a standard analytical method used by state and local agencies for roadway traffic noise prediction. The model is based upon reference energy emission levels for automobiles, medium trucks (2 axles) and heavy trucks (3 or more axles), with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA Model was developed to predict hourly Leq values for free-flowing traffic conditions and is generally considered to be accurate within ±1.5 dB. To predict Ldn values, it is necessary to determine the hourly distribution of traffic for a typical day and adjust the traffic volume input data to yield an equivalent hourly traffic volume.[5]

Average Daily Traffic (ADT) traffic volumes were provided for Existing (without project), Existing Plus Project, Cumulative 2040 No Project and Cumulative 2040 Plus Project traffic scenarios (see Appendix H).

The percentage of trucks and the day/night distribution of traffic on local roadways used for modeling was approximated based upon data previously obtained, from previous projects in the project vicinity. The noise modeling assumptions used to calculate project traffic noise are provided as Appendix G.

Traffic noise exposure levels for specific scenarios were calculated based upon the FHWA Model and the above-described model inputs and assumptions. Project-related significant impacts would occur if an increase in traffic noise associated with the project would result in noise levels exceeding the City's applicable noise level standards at the location(s) of sensitive receptors or result in an increase of five (5) dB or more if the resulting noise level would exceed that described as "normally acceptable" by the City of Lemoore.

The General Plan Noise Element considers a noise exposure up to 60 dB Ldn as "normally acceptable" for low density single family residential land uses. Traffic noise was modeled at fifteen representative receptor locations in the project vicinity. The fifteen modeled receptors are

[5] Noise Assessment for the Lacey Ranch Master Plan prepared by WJV Acoustics. June 2021. Appendix G. Page 10.

located at roadway setback distances representative of the sensitive receptors along each analyzed roadway segment and are demonstrated in Figure 3.11-2.

**Figure 3.11-2**
**Modeled Traffic Noise Receptor Locations**

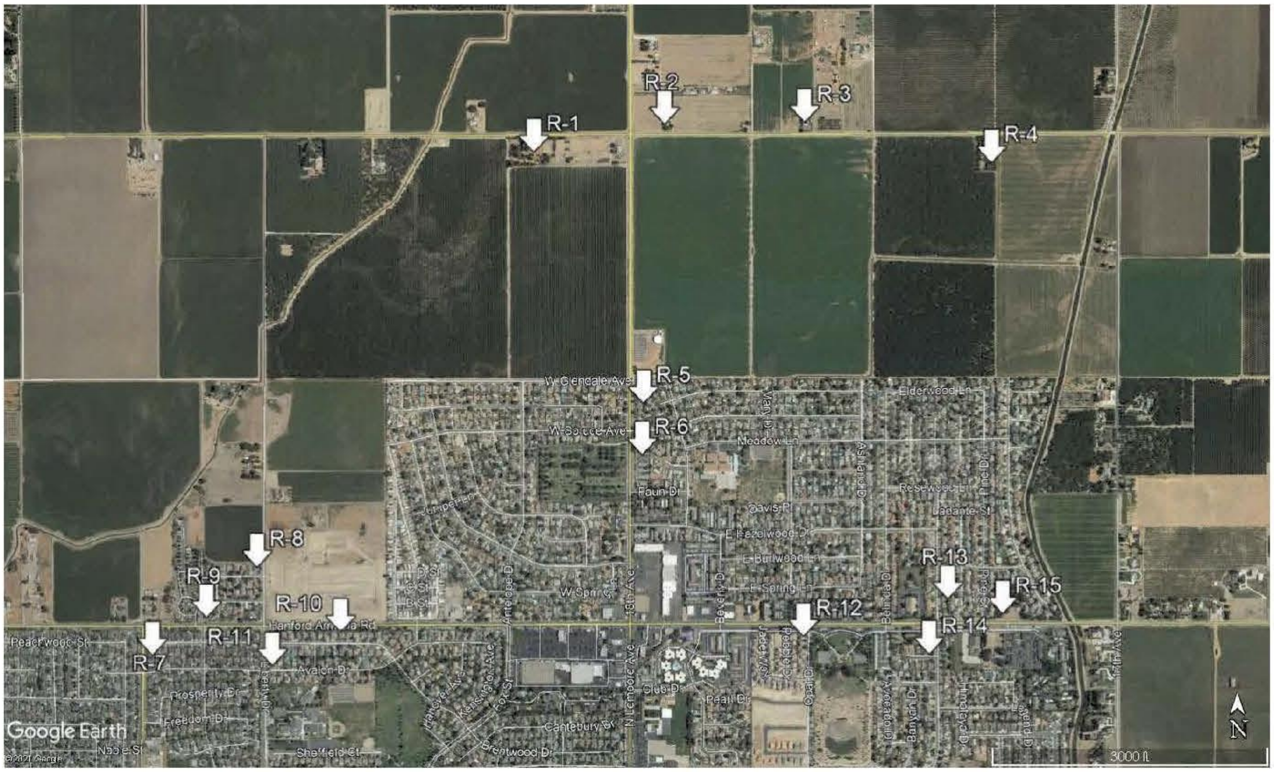


Table 3.11-5 provides a comparison of traffic noise levels at the 15 modeled receptor locations for Existing, Existing Plus Project, 2040 No Project and 2040 Plus Project traffic conditions. Reference to Table VII of Appendix G indicates that project-related increases in traffic noise at nearby sensitive receptor locations would generally increase by less than 1 dB for Cumulative 2040 traffic conditions. Project-related increases in traffic noise at receptor locations located along Lacey Boulevard, east of the future alignment of Mary Drive (R-3 and R-4) would be approximately 1 dB for Cumulative 2040 traffic conditions. Project-related increases in traffic noise at receptor locations along 18th Avenue (Lemoore Street), south of the Project site (R-5 and R-6) would be approximately 2-3 dB for Cumulative 2040 traffic conditions.

Project-related increases in traffic noise along the fifteen analyzed receptor locations would not result in noise levels exceeding the City's 60 dB Ldn exterior noise level standard or result in an increase of 5 dB at any receptor location. It should be noted, while traffic noise exposure levels at some receptor locations (R-9, R-10 and R-15) do exceed the City's 60 dB Ldn exterior noise level

standard, this exceedance is not a result of the Project, and is therefore not considered to be a significant impact. Additionally, many receptors have existing sound walls (including R-9, R-10 and R-15) which would result in noise levels lower than those described in Table 3.11-5.

Table 3.11-6 also indicates that Project-related increases in traffic noise at nearby sensitive receptor locations would generally increase by less than 1 dB for Cumulative 2040 traffic conditions. Project-related increases in traffic noise at receptor locations located along Lacey Boulevard, east of the future alignment of Mary Drive (R-3 and R-4) would be approximately 1 dB for Cumulative 2040 traffic conditions. Project-related increases in traffic noise at receptor locations along 18th Avenue (Lemoore Street), south of the project site (R-5 and R-6) would be approximately 2-3 dB for cumulative 2040 traffic conditions.

Therefore, Project-related increases in traffic noise exposure are considered to be ***less than significant.***

**Table 3.11-6**
**Project-Related Increases in Traffic Noise, dB, CNEL[6]**

| Model Receptor | Existing | Existing Plus Project | 2040 No Project | 2040 Plus Project | Change (Max) | Significant Impact? |
|---|---|---|---|---|---|---|
| R-1 | 53 | 53 | 54 | 54 | +2 | No |
| R-2 | 57 | 58 | 58 | 59 | +2 | No |
| R-3 | 57 | 58 | 58 | 59 | +2 | No |
| R-4 | 51 | 52 | 52 | 53 | +2 | No |
| R-5 | 55 | 57 | 55 | 57 | +2 | No |
| R-6 | 55 | 58 | 55 | 58 | +3 | No |
| R-7 | 55 | 55 | 56 | 56 | +1 | No |
| R-8 | 53 | 53 | 55 | 55 | +2 | No |
| R-9 | 59 | 59 | 60 | 60 | +1 | No |
| R-10 | 60 | 61 | 61 | 62 | +2 | No |
| R-11 | 52 | 53 | 54 | 54 | +2 | No |
| R-12 | 56 | 56 | 56 | 57 | +1 | No |
| R-13 | 51 | 51 | 52 | 52 | +1 | No |
| R-14 | 56 | 57 | 57 | 57 | +1 | No |
| R-15 | 60 | 60 | 60 | 60 | 0 | No |

[6] Noise Assessment for the Lacey Ranch Master Plan prepared b54y WJV Acoustics54. June 2021. Appendix G. Page 13.

*Impact Determination*

As described herein, the Project would not result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project, or exceed standards established in the local general plan or noise ordinance, or applicable standards of other agencies with the incorporation of mitigation measures. Impacts are ***less than significant*** with the incorporation of Mitigation Measures NOI-1 and NOI-2.

**Mitigation Measures**

**NOI - 1:** a) All construction equipment shall be equipped with noise control devices (e.g. mufflers) in accordance with manufacturers' specifications throughout construction. Construction equipment shall be periodically inspected to ensure proper maintenance and presence of noise control devices (e.g. lubrication, mufflers that do not leak, and shrouding).
b) Equipment staging and laydown areas shall be located at the furthest practical distance from nearby residential land uses. To the extent possible, staging and laydown areas should be located at least 500 feet of existing residential dwellings.
c) Haul trucks shall not be allowed to idle for periods greater than five minutes, except as needed to perform a specified function (e.g., concrete mixing).

**NOI - 2:** Prior to the issuance of grading permits, signs legible at a distance of 50 feet shall be posted at the construction site and near adjacent sensitive receptors displaying hours of construction activities and providing the contact phone number of a designated noise disturbance coordinator.

**Impact 3.11-2:** *Generation of excessive groundborne vibration or groundborne noise levels?*

**Less Than Significant.** The dominant sources of man-made vibration are sonic booms, blasting, pile driving, pavement breaking, demolition, diesel locomotives, and rail-car coupling. None of these activities are anticipated to occur with construction or operation of the proposed Project. Vibration from construction activities could be detected at the closest sensitive land uses, especially during movements by heavy equipment or loaded trucks and during some paving activities (if they were to occur). Typical vibration levels at distances of 100 feet and 300 feet are summarized by Table 3.11-7. These levels would not be expected to exceed any significant threshold levels for annoyance or damage, as provided in Appendix G.

**Table 3.11-7**
**Typical Vibration Levels During Construction[7]**

| | PPV (in/sec) | |
|---|---|---|
| **Equipment** | **@ 100´** | **@ 300´** |
| Bulldozer (Large) | 0.011 | 0.006 |
| Bulldozer (Small) | 0.0004 | 0.00019 |
| Loaded Truck | 0.01 | 0.005 |
| Jackhammer | 0.005 | 0.002 |
| Vibratory Roller | 0.03 | 0.013 |
| Caisson Drilling | 0.01 | 0.006 |

After full Project build out, it is not expected that ongoing operational activities will result in any vibration impacts at nearby sensitive uses. Activities involved in trash bin collection could result in minor on-site vibrations as the bin is placed back onto the ground. Such vibrations would not be expected to be felt at the closest off-site sensitive uses. Any impacts would be ***less than significant.***

**Mitigation Measures**

None are required.

**Impact 3.11-3:** *For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?*

**Less Than Significant.** The Project is not located within two miles of a public airport or private airstrip. The Project is located approximately 7 miles east of the NASL-facility. As noted in the AICUZ report, Figure 4-1, the site is outside identified Noise Contour zones. Although aircraft from NAS- Lemoore will fly overhead, the Project would not expose residents to excessive noise levels from aircraft or military operations. Therefore, there is a ***less than significant impact.***

**Mitigation Measures**

None are required.

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[7] Noise Assessment for the Lacey Ranch Master Plan prepared b54y WJV Acoustics54. June 2021. Appendix G. Page 15.

**Cumulative Impacts**

**Less Than Cumulatively Considerable**. Construction of the individual development projects allowed under the land use designations of the City General Plan may result in the generation of site-specific noise increases from stationary noise sources, and may contribute incrementally to noise from mobile sources. Additionally construction noise from individual development projects allowed under the 2030 Lemoore General Plan may result in the generation of site-specific noise increases. Due to the localized nature of noise impacts, cumulative impacts would be largely limited to areas within the general vicinity of the Project, which is generally considered 1,000 feet.

The proposed Project's temporary construction activities, in combination with the construction of other reasonably foreseeable projects in the area could result in increased short-term construction noise levels in the Project area (depending upon the specific timing of the construction of those other projects and proximity to the project site). Construction activities associated with other projects in proximity to the Project site could occur at the same time as the proposed project. However, other projects would also be required to adhere to all City noise-related regulations. Implementation of Mitigation Measures NOI-1 and NOI-2 would reduce and minimize cumulative construction noise level and cumulative impacts would be less than significant level.

Cumulative construction may also result in the exposure of people to or the generation of excessive groundborne vibration. The same receptor as identified for construction noise would be the closest to be impacted by the Project with respect to construction related vibration as well. Due to these distances, and the rapid attenuation of groundborne vibration, the Project and any nearby other project would not be in close enough proximity to the sensitive receptors such that any sensitive receptor would be exposed to substantial groundborne vibration levels. Therefore, cumulative impact in terms of groundborne vibration would be less than significant.

As indicated herein, the Project will not result in significant permanent increases in noise or vibration levels. In addition, while temporary construction noise does not constitute a significant impact either at the project-level or cumulative level, construction noise mitigation is included to ensure impacts remain less than significant. Therefore, with implementation of NOI-1 and NOI-2, the proposed Project's incremental contribution to cumulative noise impacts would be ***less than cumulatively considerable***.

# 3.12 Population and Housing

This section of the DEIR evaluates the potential environmental effects related to population and housing associated with implementation of the proposed Project.

The environmental impacts of Project-induced population growth within the City are evaluated within this EIR in other sections (e.g. air quality, traffic, noise, water use, biological impacts, etc.). For instance, Project-related impacts to the local transportation system are addressed in Chapter 3.17 – *Transportation*; City infrastructure (e.g., sewer, wastewater, etc) impacts are addressed in Chapter 3.19 – *Utilities*; impacts on police/fire/school and other public services are analyzed in Chapter 3.15 – *Public Services*, etc. Refer to those individual Chapters as well as other sections for specific discussions on Project-related impacts in relation to cumulative population effects on the City and surrounding area.

## Environmental Setting

The Project is proposing to subdivide and develop approximately 156 acres of land into a planned residential community with a mix of single-family and multi-family housing units in an area immediately north of the City limits. The southern portion of the site is designated by the City of Lemoore General Plan for future residential use while the northern portion of the site is outside of the City's Sphere of Influence (SOI). The Project will include up to 825 residential units of varying sizes and densities, constructed in four phases over 16 years. The Project also includes development of four parks and 1.64 acres of trail area.

Existing Population

The United States Census Bureau estimates the January 2020 population of the City to be 27,038.[1] According to the General Plan, Lemoore has an average growth rate of 3.1 percent with a projected population of about 48,250 persons by the Year 2030.[2]

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[1] U.S. Census Bureau: https://www.census.gov/quickfacts/lemoorecitycalifornia Accessed December 2021.

[2] 2030 Lemoore General Plan. Chapter 1 – Introduction. https://lemoore.com/wp-content/uploads/2018/01/lemoore_gp_ch1_intro_060308.pdf. Accessed May 2021. Page 1-14.

Employment

According to the 2016-2024 Housing Element, the Naval Air Station Lemoore (NASL), is the largest employer in the City of Lemoore, with 7,600 civilian employees.[3] NASL is located approximately three miles west of the City of Lemoore and is one of the Navy's largest jet bases in the US and a major economic driver for Lemoore.

The California Employment Development Department (EDD) provides labor force and employment data for the City of Lemoore. According to the EDD, in October 2021, the City had 11,900 persons in the Labor Force with 11,200 persons employed. This results in an unemployment rate of 6.4%.[4]

Existing and Project Housing

The Department of Finance estimates that as of January 1, 2021, the City has a total of 9,535 housing units (6,832 of those are detached single-family units) with a vacancy rate of 3.8%.[5] According to the City's General Plan, the City anticipated that General Plan buildout (Year 2030) would result in approximately 16,300 total housing units in the City.[6] The proposed Project would develop up to 825 residential units at full buildout.

## Regulatory Setting

Federal Regulations

*US Department of Housing and Urban Development (HUD)*

HUD's mission is to create strong, sustainable, inclusive communities and quality affordable homes for all. HUD is working to strengthen the housing market to bolster the economy and protect consumers; meet the need for quality affordable rental homes: utilize housing as a

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[3] Kings County and Cities of Avenal, Corcoran, Hanford and Lemoore. 2016-2024 Housing Element. https://lemoore.com/wp-content/uploads/2018/01/kings_county_2016_housing_element_2016_07_26_final_cert ified.pdf. Accessed May 2021. Page 2-15.

[4] CA Employment Development Department. https://www.labormarketinfo.edd.ca.gov/data/labor-force-and-unemployment-for-cities-and-census-areas.html. Accessed December 2021.

[5] California Department of Finance. E-1 Population Estimates for Cities, Counties, and the State, January 1, 2020 and 2021. https://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-1/. Accessed May 2021.

[6] 2030 Lemoore General Plan. Chapter 1 – Introduction. https://lemoore.com/wp-content/uploads/2018/01/lemoore_gp_ch1_intro_060308.pdf. Accessed May 2021. Page 1-14.

platform for improving quality of life; build inclusive and sustainable communities free from discrimination; and transform the way HUD does business.[7]

State of California Regulations

*California Department of Housing and Community Development (HCD)*

HCD's mission is to "[p]rovide leadership, policies and programs to preserve and expand safe and affordable housing opportunities and promote strong communities for all Californians."[8] "In 1977, the State Department of Housing and Community Development (HCD) adopted regulations under the California Administrative Code, known as the Housing Element Guidelines, which are to be followed by local governments in the preparation of local housing elements. AB 2853, enacted in 1980, further codified housing element requirements. Since that time, new amendments to State Housing Law have been enacted.

State Housing Law also mandates that local governments identify existing and future housing needs in a Regional Housing Needs Assessment (RHNA).

*California Relocation Assistance Act*

The State of California adopted the California Relocation Assistance Act (*California Government Code* §7260 et seq.) in 1970. This State law, which follows the federal Uniform Relocation Assistance and Real Property Acquisition Act, requires public agencies to provide procedural protections and benefits when they displace businesses, homeowners, and tenants in the process of implementing public programs and projects. This State law calls for fair, uniform, and equitable treatment of all affected persons through the provision of relocation benefits and assistance to minimize the hardship of displacement on the affected persons.

Local Regulations

Kings County Association of Governments (KCAG)

The Kings County Association of Governments (KCAG) as the Council of Governments is charged with the role of determining how the State determined regional housing needs for the Kings County Region will be distributed among the unincorporated County and the four incorporated cities of Avenal, Corcoran, Hanford, and Lemoore. KCAG prepared a Regional

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[7] U.S. Department of Housing and Urban Development, Mission, http://portal.hud.gov/hudportal/HUD?src=/about/mission. Accessed May 2021.
[8] California Department of Housing and Community Development, Mission, https://www.hcd.ca.gov/about/mission.shtml. Accessed May 2021.

Housing Need Assessment (RHNA) Plan to allocate each jurisdiction's fair share of new housing units that are projected to be needed from January 1, 2014 to January 31, 2024.

Future housing needs refer to the projected amount of housing a community is required to plan for during a specified planning period. California's Housing and Community Development Department provides each regional council of governments its share of the statewide housing need. In turn, all councils of governments are required by State law to determine the portion allocated to each jurisdiction within the region. This allocation process is known as the RHAP in the KCAG region.

*2016-2024 Housing Element for Kings County and Cities of Avenal, Corcoran, Hanford and Lemoore*

California Housing Element law requires every jurisdiction to prepare and adopt a housing element as part of a City's General Plan.

State Housing Element requirements are framed in the California Government Code, Sections 65580 through 65589, Chapter 1143, Article 10.6. The law requires the State Department of Housing and Community Development (HCD) to administer the law by reviewing housing elements for compliance with State law and by reporting its written findings to the local jurisdiction. Although State law allows local governments to decide when to update their general plans, State Housing Element law mandates that housing elements be updated every eight years. The City's Housing Element contains information on housing needs, land inventory, constraints, and a program of action.

## Thresholds of Significance

The thresholds of significance for this section are established by the CEQA Checklist Item.

- *Induce substantial unplanned population growth in an area, either directly or indirectly?*
- *Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?*

## Impacts and Mitigation Measures

**Impact 3.12-1:** *Induce substantial unplanned population growth in an area, either directly or indirectly?*

**Less Than Significant Impact.** Project implementation will have a direct, growth inducing impact on the area's population and housing stock by facilitating the development of up to 825 new households within the City of Lemoore. Development is expected to occur over 16 years as determined by market demands and will be constructed over four phases, broken down as follows:

- Phase 1 – 125 single family lots and 90 multifamily lots
- Phase 2 – 125 single family lots and 100 multifamily lots
- Phase 3 – Dependent on market conditions
- Phase 4 – Dependent on market conditions

It is anticipated that the Project would begin development in 2022.

For purposes of evaluating the environmental impact of population growth in Lemoore under CEQA, the question becomes whether or not the Project will induce population beyond what the City has or will plan for and/or can accommodate at full buildout of the Project. The assessment takes into account Project-related impacts to topics like traffic, water supply, public services (police, fire, etc.), sewer / storm drain capacity, and other related topics, as the City has prepared infrastructure Master Plans based on buildout of the City's General Plan.

The United States Census Bureau estimates the January 2020 population of the City to be 27,038.[9] According to the General Plan, Lemoore has an average growth rate of 3.1 percent with a projected population of about 48,250 persons by the Year 2030.[10] As discussed previously, the City averages 3.1 persons per household, which could result in an increase of approximately 2,558 people at full Project buildout. The City's current population of 27,038 residents would be increased by approximately 9.5% to 29,596 from the Project. Table 3.12-1 shows the City's existing population, the increase in population from the proposed Project, and the City's General Plan projected population in Year 2030, assuming full buildout of the General Plan. The last column shows the additional population that could be accommodated under the City's General Plan even with full buildout of the proposed Project.

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[9] U.S. Census Bureau: https://www.census.gov/quickfacts/lemoorecitycalifornia Accessed December 2021.

[10] 2030 Lemoore General Plan. Chapter 1 – Introduction. https://lemoore.com/wp-content/uploads/2018/01/lemoore_gp_ch1_intro_060308.pdf. Accessed May 2021. Page 1-14.

**Table 3.12-1: Population Estimates**

| Existing Population (2020) | Proposed Project Population | Existing Plus Project Population | General Plan 2030 Projected Population | Additional Population That Could Be Accommodated Under the 2030 General Plan |
|---|---|---|---|---|
| 27,038 | 2,558 | 29,596 | 48,250 | 18,654 |

The Department of Finance estimates that as of January 1, 2021, the City has a total of 9,535 housing units (6,832 of those are detached single-family units) with a vacancy rate of 3.8%.[11] According to the City's General Plan, the City anticipated that General Plan buildout (Year 2030) would result in approximately 16,300 total housing units in the City.[12] The proposed Project would develop up to 825 residential units at full buildout. Table 3.12-2 shows the existing number of units in the City, the number of units proposed by the Project, and the City's General Plan projected number of housing units in Year 2030, assuming full buildout of the General Plan. The last column shows the additional number of housing units that could be accommodated under the City's General Plan even with full buildout of the proposed Project.

**Table 3.12-2: Residential Units**

| Existing Units (2021) | Proposed Project # of Units | Existing Plus Project # of Units | General Plan 2030 Projected Buildout # of Total Units | Additional Housing Units That Could Be Accommodated Under the 2030 General Plan |
|---|---|---|---|---|
| 9,535 | 825 | 10,360 | 16,300 | 5,940 |

The 2016-2024 Housing Element for Kings County and Cities of Avenal, Corcoran, Hanford and Lemoore (Housing Element) contains data pertaining to anticipated housing needs in the City.

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[11] California Department of Finance. E-1 Population Estimates for Cities, Counties, and the State, January 1, 2020 and 2021. https://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-1/. Accessed May 2021.

[12] 2030 Lemoore General Plan. Chapter 1 – Introduction. https://lemoore.com/wp-content/uploads/2018/01/lemoore_gp_ch1_intro_060308.pdf. Accessed May 2021. Page 1-14.

According to the Housing Element, the City has an existing need for 2,985 housing units[13] ranging in categories from "Very Low" to "Above Moderate" income category housing needs. The Project contains a mixture of detached single-family homes and multi-family units which will assist the City in meeting some of its Housing Element goals and requirements.

As shown in the tables above, the anticipated population and housing unit increase associated with the proposed Project is within the growth projections of the City's 2030 General Plan.

While other future residential developments are also likely to occur in the City, it is anticipated that the City can accommodate the Project and other residential developments in the City. The General Plan anticipated a population of up to 48,250 people with up to 16,300 residential units by 2030. Given the City's current population (27,038 persons) and housing stock (9,535 units), the City could accommodate the proposed Project plus an additional 18,654 persons and 5,940 housing units according to the City's General Plan.

Based on the City's General Plan, infrastructure master planning documents, and the City's Housing Element, it is determined that the proposed Project will not induce unplanned population growth beyond that which can be accommodated by the City. It has been determined that the City has adequate capacity to serve the Project and therefore, the Project will have a ***less than significant*** impact occurring from inducement of unplanned population.

**Mitigation Measures:** None are required.

**Impact 3.12-2:** *Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?*

**No Impact.** The Project site is currently undeveloped and contains no housing or structures. Thus, the proposed Project would not displace existing housing or people. There is ***no impact***.

**Mitigation Measures:** None are required.

[13] 2016-2024 Housing Element for Kings County and Cities of Avenal, Corcoran, Hanford and Lemoore, page 2-39. Accessed May 2021.

## Cumulative Impacts

**Less Than Cumulatively Considerable.** The proposed project would result in population growth in an area currently designated for agricultural uses. Growth will also occur in other areas of the City and unincorporated communities in Kings County in areas surrounding the City. However, as noted above, it is anticipated that the City can accommodate the Project and other residential developments in the City. The General Plan anticipated a population of up to 48,250 people with up to 16,300 residential units by 2030. Based on the City's current population (27,038 persons) and housing stock (9,535 units), the City could accommodate the proposed Project plus an additional 18,654 persons and 5,940 housing units according to the City's General Plan.

The Project in conjunction with the current and reasonably foreseeable projects would lead to what is anticipated population growth. It should also be noted that while the proposed Project and other projects would result in an increase in new housing, related population growth, and associated environmental impacts discussed throughout this EIR, they would also help meet a documented need for housing supply in the region, thus beneficially affecting the region's continued demand for housing The City of Lemoore, Kings County, and other incorporated and unincorporated jurisdictions are required by State law to use the General Plan process, the CEQA process, as well as other planning processes, such as utility master plans, to plan for and control future growth. Since the proposed Project will not result in an increase in population and housing units above what was planned for in the City's General Plan, there would not be a cumulative impact associated with unplanned growth adversely affecting population and housing. As a result, the proposed project would ***not contribute to a significant cumulative impact***.

# 3.13 Public Services

This section of the DEIR identifies potential impacts associated with the City's police and fire protection services, school facilities, and other public facilities.

## Environmental Setting

Fire Protection

The Lemoore Volunteer Fire Department (LVFD) has operated as an all-volunteer department since 1921. The LVFD includes a Chief, Assistant Chiefs, Crew Captains, Engineers, Emergency Medical Technicians, one paid part-time Secretary, and one paid full-time maintenance worker. The department covers an area of approximately nine square miles, with Mutual Aid Agreements with Kings County Fire, Hanford City Fire and the Naval Air Station Lemoore. Other public services provided include fire inspections, tours and demonstrations, permitting of certain hazardous materials, and investigation of hazardous materials incidents. The Fire Department regulates explosive and hazardous materials under the Uniform Fire Code, and permits the handling, storage and use of any explosive or other hazardous material.[1] The nearest fire station to the Project site is the Lemoore Fire Department Station, located approximately 1.6 miles southwest of the Project site at 210 Fox Street in Lemoore.

Police Services

Housed at 657 Fox Street on the northwest corner of Fox Street and Cinnamon Drive (approximately 1.4 miles southwest of the Project site), the Lemoore Police Department provides police services for the City. In 2020, the Lemoore Police Department had nine Reserve Police Officers. Three Reserve Police Officers were hired and became full time Police Officers with the Department and one Reserve retired. One Evidence Technician was also hired. In addition, one Commander title was changed to Captain, and two Lieutenant positions were added.[2] According to the City's General Plan EIR, the Police Department operates at a ratio of 1.33 officers per thousand residents, which is lower than the western U.S. average of 1.5 officers per thousand residents reported by the Federal Bureau of Investigation.[3] Response times and the ability of the

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[1] City of Lemoore General Plan, 2030. Chapter 8: Safety and Noise, page 8-13. https://lemoore.com/wp-content/uploads/2018/01/lemoore_gp_ch8_safety_noise_3_20_2012.pdf. Accessed June 2021.

[2] Lemoore Police Department – 2020 Annual Report, page 30. Accessed September 2021.

[3] City of Lemoore General Plan EIR, 2030, page 3.3-14. Accessed June 2021.

Police Department to provide acceptable levels of service are contingent on increasing staffing levels, sworn and civilian, consistent with resident population increase and the population of visitors, merchants, schools, and shoppers with the Department's service area. The current Police Department facility is nearing capacity. Facility and manpower resources will continue to be stretched as demand for services increase in the future. As the City grows, the Police Department faces the dual challenges of maintaining smooth traffic flow and ensuring the safety of Lemoore citizens. It will be important for the City of Lemoore to consider projected growth and geographic distribution of population as presented in the General Plan when allocating resources to the Police Department and negotiating locations for new facilities.[4]

Schools

The Lemoore Union Elementary School District and the Lemoore Union High School District oversee public schools in the Planning Area. The Elementary School District is comprised of four elementary schools (from grades K-6), one middle school, and one charter elementary /middle school (K-8). The Lemoore Union High School District has a larger coverage area that includes the unincorporated community of Stratford and Naval Air Station Lemoore (NAS Lemoore) and currently comprises the main campus of Lemoore High School, an adjoining campus of the Gertrude F. Gundacker Alternative Education Facilities, and Lemoore Middle College High School which is located at the West Hills College Campus. Together, both elementary and high school districts provide education to approximately 5,600 students.[5] Meadow Lane Elementary School is approximately 0.15 miles to the south of the Project site.

Parks

Currently, the Parks and Recreation Department of the City of Lemoore maintains approximately 88 acres of the parkland, which excludes the City owned municipal golf course. The City's ponding basins, including the one adjacent to West Hills College, provide an additional 38 acres of open space. There are no parks within the vicinity of the Project.[6] The nearest park is Heritage Park, located approximately 0.8 miles south of the Project site. Lions Park is approximately 1.1 miles to the southeast.

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[4] City of Lemoore General Plan, 2030. Chapter 8: Safety and Noise, pages 8-12 and 8-13.

[5] Ibid. Page 5-1.

[6] Ibid. Page 5-7.

Libraries

The nearest library is Lemoore Branch Library, located approximately 1.2 miles southwest of the Project site. The library is located at 457 C Street near downtown and will require larger facilities to meet the area's needs through General Plan buildout.[7]

## Regulatory Setting

Federal Regulations

There are no federal regulations pertaining to public services that apply to the proposed Project.

State of California Regulations

*California Department of Forestry and Fire Protection*

Under Title 14 of the California Code of Regulations, CAL FIRE has the primary responsibility for implementing wildfire planning and protection for the SRA. CAL FIRE develops fire safe regulations and issues fire safe clearances for land within a fire district of the SRA. More than 31 million acres of California's privately-owned wildlands are under the jurisdiction of the CAL FIRE.

In addition to wildland fires, CAL FIRE's planning efforts involve responding to other types of emergencies that may occur on a daily basis, including residential or commercial structure fires, automobile accidents, heart attacks, drowning victims, lost hikers, hazardous material spills on highways, train wrecks, floods, and earthquakes. Through contracts with local government, CAL FIRE provides emergency services in 36 of California's 58 counties (CAL FIRE, 2016).

*Senate Bill 50*

The Leroy F. Greene School Facilities Act of 1998, or Senate Bill 50 (SB 50), authorizes school districts to levy developer fees to finance the construction or reconstruction of school facilities. In January 2015, the State Allocation Board (SAB) approved maximum Level 1 developer fees at $0.54 per square foot of enclosed and covered space in any commercial or industrial development, and $3.36 per square foot for residential development (SAB, 2014). These fees are intended to address the increased educational demands on the school district resulting from new development. Public school districts

[7] Ibid. Page 5-12.

can, however, impose higher fees than those established by the SAB, provided they meet the conditions outlined in the act. Private schools are not eligible for fees collected pursuant to SB 50.

The payment of school mitigation impact fees authorized by SB 50 is deemed to provide full and complete mitigation of project impacts on school facilities. SB 50 provides that a State or local agency may not deny or refuse to approve the planning, use, or development of real property on the basis of a developer's refusal to provide mitigation in amounts in excess of that established by SB 50.

*Education Code Section 17620 and Government Code Section 65995 et. seq.*

Funding for schools and school facilities impacts is outlined in Education Code Section 17620 and Government Code Section 65995 et. seq., which governs the amount of fees that can be levied against new development. These fees are used to construct new or expanded schools facilities. Payment of fees authorized by the statute is deemed "full and complete mitigation."

*California Occupational Safety and Health Administration*

In accordance with California Code of Regulations Title 8 Sections 1270 "Fire Prevention" and 6773 "Fire Protection and Fire Equipment," the California Occupational Safety and Health Administration (Cal- OSHA) has established minimum standards for fire suppression and emergency medical services (EMS). The standards include, but are not limited to, guidelines on the handling of highly combustible materials, fire hose sizing requirements, restrictions on the use of compressed air, access roads, and the testing, maintenance and use of all firefighting and emergency medical equipment.

*City Emergency Response/Evacuation Plans*

The State of California passed legislation authorizing the Office of Emergency Services (OES) to prepare a Standard Emergency Management System (SEMS) program, which sets forth measures by which a jurisdiction should handle emergency disasters. Non-compliance with SEMS could result in the State withholding disaster relief from the non-complying jurisdiction in the event of an emergency disaster.

*California Fire Code*

The California Fire Code (CFC) contains regulations relating to construction, maintenance, and use of buildings. Topics addressed in the code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing

buildings and the surrounding premises. The CFC also contains specialized technical regulations related to fire and life safety.

*California Health and Safety Code*

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code, which includes regulations for building standards, fire protection and notification systems, fire protection devices such as extinguishers, smoke alarms, high-rise buildings, childcare facility standards, and fire suppression training.

Local Regulations

*City of Lemoore General Plan Policies*

The following lists goals and policies from the City of Lemoore 2030 General Plan pertaining to public services that are applicable to the proposed Project.

**PSCF-I-1** Establish a goal of 6 acres of parkland per thousand residents to be met by:

- Dedication and reservation requirements consistent with the Quimby Act, for landscaped open spaces, parks, trail systems, and/or special community service facilities in new residential developments based on a standard of 5 acres of developed parkland per thousand residents; and

- A standard of one acre per thousand residents to be met with an impact fee for City-owned and operated parks and special recreation areas that serve all residents.

*In addition to new parkland dedicated by developers, the City will continue to acquire or re-develop parklands as needed, subject to availability of funding. It is the City's intent to meet the parkland goal with functional public acreage only. Restricted recreation facilities (such as golf courses, raceways, and on-site school recreational facilities) are not included in this parkland total. The City also will maintain flexibility in the location and design of parks. In-lieu fees will only be acceptable where an exemption from providing a neighborhood park facility would not adversely affect local residents because an existing park is nearby.*

**PSCF-I-3** Require non-residential developers contribute to the City's parks and open space system based on proportional share of needs generated and use of facilities, in compliance with the State Mitigation Fee Act and other applicable laws.

*A "nexus" study will be undertaken to establish impact fees based on surveys of park use during the workday by employees of nearby development. Exemptions for small infill projects may be granted.*

**PSCF-I-9** Work with the Lemoore Branch Library and Kings County to ensure library facilities are adequate to meet current and future needs and to implement supplemental funding programs, if warranted.

**SN-G-5** Maintain and enhance the City's capacity for law enforcement, fire-fighting and emergency response.

**SN-I-15** Enforce the Uniform Fire Code for construction plans and final occupancy permits.

**SN-I-22** Assess the manpower, facility, and equipment needs of Police and Fire services at least every three years in order to provide all residents with an optimal level of protection.

*To meet existing and future demand, the City will continue to plan for adequate law enforcement and fire-fighting services and ensure their staffing ratios and response time meet national standards. The requirements for additional Police and Fire Stations shall be considered in Capital Improvement Program budgets and development impact fees.*

**SN-I-25** Maintain mutual aid agreements with Kings County, Naval Air Station Lemoore, neighboring law enforcement agencies and the California Highway Patrol.

**SN-I-27** Maintain Fire Department performance and response standards at Class 3 ISO rating or better, including building and staffing a new fire station in West Lemoore if necessary.

**SN-I-28** Require adequate access for emergency vehicles in all new development, including adequate widths, turning radii, and vertical clearance on new streets.

*The street cross-sections in the General Plan are consistent with this policy.*

**SN-I-30** Maintain mutual aid agreements with Kings County, California Department of Forestry, Naval Air Station Lemoore, and nearby cities for fire and disaster services.

*Additional policies in the Land Use Element will ensure that new development finances additional public safety facilities as necessary to mitigate its own impacts.*

*City of Lemoore Subdivision Ordinance*

The existing City standard for parkland dedication established in the City Subdivision Ordinance is 5 acres of parkland per thousand residents.

## Thresholds of Significance

The thresholds of significance for this section are established by the CEQA Checklist Item.

- Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

  Fire protection?

  Police protection?

  Schools?

  Parks?

  Other public facilities?

## Impacts and Mitigation Measures

**Impact 3.13-1:** *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order*

*to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*

*Fire protection?*

*Police protection?*

*Schools?*

*Parks?*

*Other public facilities?*

**Less Than Significant With Mitigation.** The proposed Project consists of construction and operation of a maximum of 825 residential units with a mix of single-family and multi-family units in an area that is dominated by farmland / agricultural operations and scattered rural residential housing to the north, east and west, and residential development to the south.

The Department of Finance estimates the January 2021 population of the City to be 26,809.[8] According to the City's General Plan, Lemoore has an average growth rate of 3.1 percent with a projected population of about 48,250 persons by the Year 2030.[9] As discussed previously, the City averages 3.1 persons per household, which could result in an increase of approximately 2,558 people at full Project buildout (825 units X 3.1 persons per household = 2,558 persons).

As with other areas of the City, the Project will require public services. These topics are addressed individually below.

*Fire Protection*

Fire protection services would be required to serve the proposed Project. As previously described, the City of Lemoore provides firefighting response services through the Lemoore Volunteer Fire Department.

To ensure that new development does not adversely affect the City's current fire response standards, the City's General Plan requires new development to contribute its fair share of the cost of the improvement of services. General Plan policies ensure that land is reserved for civic

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[8] California Department of Finance. E-1 Population Estimates for Cities, Counties, and the State, January 1, 2020 and 2021. https://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-1/. Accessed May 2021.

[9] 2030 Lemoore General Plan. Chapter 1 – Introduction. https://lemoore.com/wp-content/uploads/2018/01/lemoore_gp_ch1_intro_060308.pdf. Accessed May 2021. Page 1-14.

and institutional uses (such as Fire and Police Stations) and that the City regularly assesses and meets the manpower and facility needs of both services.[10] According to the City's General Plan EIR, the City maintains a ratio of approximately 1.5 firefighters per thousand residents and the fire response time averages between 4 to 6 minutes.[11]

In order to maintain adequate levels of fire protection, the Lemoore Volunteer Fire Department will need to increase its resources to serve the Project. Based on the City's ration of 1.5 firefighters per thousand residents, the proposed Project would require an additional 3.8 firefighters at full buildout (2,558 residents / 1,000 = 2.558 X 1.5 = 3.8). The City's General Plan requires the expansion of fire service to meet identified response times. The City has a number of General Plan policies which assist in the establishment of fire protection. Specifically, SN-I-27, requires the Fire Department performance and response standards at Class 3 ISO rating or better, and the construction of a new fire station in West Lemoore. The proposed Project does not trigger the need for a new fire station or expansion of existing facilities at this time. A new fire station is not proposed at this time, and the proposed Project would not directly result in the need for the construction of new fire facilities; thus, the Project will have a less than significant impact relative to construction of new fire protection facilities

The Project will comply with City building standards and local and State standards for fire-related components such as adequate emergency access, location of fire hydrants, adequate defensible space around the site, use of fire-retardant materials, etc. In addition, the proposed Project will be required to pay fire service impact fees from new development based on projected impacts from the development. This fee will be determined by the City. Payment of the applicable impact fees by the Project applicant, and ongoing revenues that would come from property taxes, sales taxes, and other revenues generated by the Project, would fund capital and labor costs associated with fire protection services. Implementation of Mitigation Measure PUB-1 would reduce impacts on fire protection services to a less-than-significant level. Given the temporary nature of the Project's construction phases, impacts to fire protection services during construction would be less than significant.

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[10] City of Lemoore General Plan EIR, 2030, page 3.3-29. Accessed September 2021.

[11] City of Lemoore General Plan EIR, 2030, pages 3.3-28 and 3.3-29. Accessed September 2021.

*Police Protection*

Police protection services would be required to serve the proposed Project. As previously described, the City of Lemoore Police Department provides police services for the City.

To ensure that new development does not adversely affect the City's current police response standards, the City's General Plan requires new development to contribute its fair share of the cost of the improvement of services. General Plan policies ensure that land is reserved for civic and institutional uses (such as Fire and Police Stations) and that the City regularly assesses and meets the manpower and facility needs of both services.[12] According to the City's General Plan EIR, the City maintains a ratio of approximately 1.33 police officers per thousand residents.[13] Average police response times for Year 2020 were provided in the Lemoore Police Department 2020 Annual Report[14]. Response times are identified by type of police call as follows:

| Police Department - Call Type | Average Response Time (Minutes:Seconds) |
|---|---|
| Priority 1 – Call for Service for immediate response / life threatening call | 3:59 |
| Priority 2 – Call for Service in progress call | 5:27 |
| Priority 3 – Call for Service quick response call | 7:43 |
| All Calls | 6:02 |

In order to maintain adequate levels of police protection, the Lemoore Police Department will need to increase its resources to serve the Project. Based on the City's ratio of 1.33 police officers per thousand residents, the proposed Project would require an additional 3.4 police officers at full buildout (2,558 residents / 1,000 = 2.558 X 1.33 = 3.4). Response times and the ability of the Police Department to provide acceptable levels of service are contingent on increasing staffing levels, sworn and civilian, consistent with resident population increase and the population of visitors, merchants, schools, and shoppers within the Department's service area.

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[12] City of Lemoore General Plan EIR, 2030, page 3.3-29. Accessed September 2021.

[13] Ibid, page 3.3-28. Accessed September 2021.

[14] Lemoore Police Department 2020 Annual Report, page 7. Accessed September 2021.

The proposed Project does not trigger the need for a new police station or expansion of existing facilities at this time. A new police station is not proposed at this time, and the proposed Project would not directly result in the need for the construction of new police facilities; thus, the Project will have a less than significant impact relative to construction of new police protection facilities.

The proposed Project will be required to pay police service impact fees from new development based on projected impacts from the development. This fee will be determined by the City and the City's Police Department. Payment of the applicable impact fees by the Project applicant, and ongoing revenues that would come from property taxes, sales taxes, and other revenues generated by the Project, would fund capital and labor costs associated with police protection services. Implementation of Mitigation Measure PUB-2 would reduce impacts on police protection services to a less-than-significant level. Given the temporary nature of the Project's construction phases, impacts to police services during construction would be less than significant.

*Schools*

As noted previously, the proposed Project will increase the City's population by up to approximately 2,558 people. According to the City's General Plan EIR, single-family households generate an average of 0.625 students per household and multi-family households generate an average of 0.507 students per household. Using the full buildout maximum of 825 units, the Project would result in the following estimated number of students:

| | |
|---|---|
| Single-family (up to 603 units) X 0.625 = | 377 students |
| Multi-family (up to 222 units) X 0.507 = | 113 students |
| Total: | 490 students |

Funding for schools and school facilities impacts is outlined in Education Code Section 17620 and Government Code Section 65995 et. seq., which governs the amount of fees that can be levied against new development. These fees are used to construct new or expanded school facilities. Payment of fees authorized by the statute is deemed "full and complete mitigation."

The proposed Project will be required to pay impact fees from new development based on the Developer Fee rates that are in place at the time payment is due. The payment amount is determined by the School District and the State Allocation Board who sets the maximum per-square-foot Level 1 school impact fees every two (even) years at its January meeting. Payment of the applicable impact fees by the Project applicant would fund capital and labor costs associated with providing school services to the Project. The Project will be required to pay the school impact fee as a condition of approval. Implementation of Mitigation Measure PUB-3 would reduce

impacts on schools and educational services to a less-than-significant level. The Project's construction phases will have no impacts to schools and educational services. .

*Parks*

The proposed Project will increase the City's population by up to approximately 2,558 people at full buildout. The City standard for parkland dedication, established in the City Subdivision Ordinance, is five (5) acres of parkland per thousand residents. Using this ratio, the Project would require at least 12.79 acres of parkland and/or payment of impact fees for City-owned and operated parks and recreation areas that serve all residents (2,558/1,000 = 2.558 X 5 = 12.79).

The proposed Project includes the construction of four parks for a total of 7.98 acres and 1.64 acres of trails for a total of 9.54 acres as identified in Figure 2-4 of Chapter Two – *Project Description*. Based on the City's requirement of five acres per thousand residents, the Project not meet the City's requirement for parkland acreage by 3.25 acres. Therefore, the Project developer will also be required to pay in lieu fees, in compliance with the goals, policies, and implementation measures of the General Plan and Lemoore City Municipal Code Title 9, Chapter 7, Article N. Implementation of Mitigation Measure PUB-4 would reduce impacts on parks and recreational services to a less-than-significant level. The Project's construction phases will have no impacts.

*Other Public Facilities*

Development of the Project will increase the demand for other public services such as libraries, governmental services, emergency services and health services. However, the relatively small increase in demand will not in and of itself require construction of additional facilities. As described in Section 3.12 – Population and Housing, the anticipated population and housing unit increase associated with the proposed Project is within the growth projections of the City's 2030 General Plan. Based on the City's General Plan and infrastructure master planning documents, it is determined that the proposed Project will not induce unplanned population growth beyond that which can be accommodated by these other public services.

Therefore, with implementation of Mitigation Measures PUB-1 through PUB-4, the proposed Project will have a ***less than significant impact*** on public services.

**Mitigation Measures:**

**PUB-1:** Prior to issuance of building permits, the Project proponent shall pay fire service impact fees for new development. The fee, or equivalent in-lieu, will be

determined by the Lemoore Volunteer Fire Department in conjunction with the City of Lemoore. Evidence of the payment of impact fees shall be submitted to the City Community Development Department.

**PUB-2:** Prior to issuance of building permits, the Project proponent shall pay police service impact fees for new development. The fee, or equivalent in-lieu, will be determined by the Lemoore Police Department in conjunction with the City of Lemoore. Evidence of the payment of impact fees shall be submitted to the City Community Development Department.

**PUB-3:** Prior to issuance of building permits, the Project proponent shall pay school impact fees. The Project's school impact fees will be determined by the Lemoore Union High School District and the Lemoore Union Elementary School District. Evidence of the payment of impact fees shall be submitted to the City Community Development Department.

**PUB-4:** Prior to issuance of building permits, the Project proponent shall pay parkland impact fees or in-lieu equivalent to maintain the City's established requirement of five acres of parkland per thousand residents. The impact fees or in-lieu equivalent will apply to the 3.25 acres of parkland not being constructed by the Project, as set forth in the City's General Plan and Lemoore City Municipal Code Title 9, Chapter 7, Article N. The Project's parkland impact fees will be determined by the City of Lemoore. Evidence of the payment of impact fees shall be submitted to the City Community Development Department.

### Cumulative Impacts

**Less Than Cumulatively Considerable.** Cumulative impacts are two or more individual impacts that, when considered together, are considerable or that compound or substantially increase other environmental impacts. Cumulative impacts for a project are considered significant if the incremental effects of the individual projects are considerable when viewed in connection with the effects of past projects, and the effects of other projects located in the vicinity of the proposed Project site. The cumulative impact analysis area for public services includes the service areas for each of the fire, police, schools and other governmental facilities serving the Project. The service area for the City of Lemoore services is considered the cumulative analysis area. Cumulative growth that would occur over the life of the Lemoore General Plan / EIR will result in increased demand for public services. As the demand for public services increases, there will

likely be a need to increase staffing and equipment in order to maintain acceptable performance standards.

As discussed above, police and fire service impacts related to the proposed Project would be less than significant with implementation of Mitigation Measures PUB-1 through PUB-4, which requires payment of service impact fees or in lieu fees. to reduce significant impacts to all public services, including fire and law enforcement services, schools and parks. Implementation of Mitigation Measures PUB-1 through PUB-4 would also prevent the decline of services in the City of Lemoore that result in physical impacts on neighborhoods. Such cumulative impacts include increase in vandalism on public spaces such as parks, lack of road and park facilities maintenance, and the lack of funding for code enforcement of regulations for public health and safety, lack of services for homelessness prevention programs, as well as lack of services and facilities for elder, adolescent and child health and safety services and general mental health facilities. With payment of the required mitigation charge as assessed by the City, impacts from the Project's cumulative contribution to decline of services would be appropriately mitigated. Therefore, the Project's incremental contribution to cumulative impacts to public services would be ***less than cumulatively considerable***.

# 3.14 Transportation

This section of the DEIR identifies potential impacts of the proposed Project pertaining to transportation and traffic in and around the Project vicinity. The information and analysis presented in this Section are based on the Traffic Impact Analysis (Appendix I-1) and the Vehicle Miles Traveled Analysis (Appendix I-2) prepared for the Project.

## Environmental Setting

<u>Study Area</u>

The Project would be located on approximately 156 acres immediately north of the City of Lemoore and is bounded by West Lacey Blvd to the north and 18$^{th}$ Avenue to the west. The proposed Project site is located in an area that is dominated by farmland, agricultural operations and scattered rural residential housing to the north, east and west, and residential development to the south. The site is currently being farmed for alfalfa.

Major roads in the Project area include:

**State Route (SR) 41** is an existing north-south two- to four-lane expressway adjacent to the proposed Project. SR 41 serves as the principal connection to various metropolitan areas within the Central San Joaquin Valley and the California Central Coast. In this area, SR 41 connects to Hanford- Armona Road.

**19th Avenue** is an existing north-south two-lane arterial divided by a two-way left-turn lane in the vicinity of the proposed Project. In this area, 19th Avenue is a two-lane arterial divided by a two-way left-turn lane between Hanford-Armona Road and Noble Street and a two-lane undivided arterial between Noble Street and Cinnamon Drive. The City General Plan Circulation Element intends to extend 19th Avenue north of Hanford-Armona Road as a two-lane collector connecting to Lemoore Avenue and designates 19th Avenue as a four-lane arterial between Hanford-Armona Road and Idaho Avenue.

**Liberty Drive (18 ¾ Avenue)** is an existing north-south undivided two-lane local roadway in the vicinity of the proposed Project. In this area, Liberty Drive is an undivided two-lane local roadway between Lacey Boulevard and Hanford-Armona Road and a two-lane collector divided by a two-way left-turn lane between Hanford-Armona Road and Cinnamon Drive. The City General Plan Circulation Element designates Liberty Drive as a four-lane collector between Lacey Boulevard and Cinnamon Drive.

**Lemoore Avenue (18th Avenue)** is an existing north-south undivided two-lane local roadway adjacent to the proposed Project. In this area, Lemoore Avenue is a two-lane undivided arterial north of Glendale Avenue through the City of Lemoore SOI and a two-lane arterial divided by a two-way left-turn lane between Glendale Avenue and Cinnamon Drive. The City General Plan Circulation Element designates Lemoore Avenue as an arterial north of Hanford-Armona Road and a four-lane arterial between Hanford Armona Road and Cinnamon Drive.

**17th Avenue** is an existing north-south undivided two-lane local roadway in the vicinity of the proposed Project. In this area, 17th Avenue is an undivided local roadway that runs through the City. The City General Plan Circulation Element designates 17th Avenue as a two-lane local roadway.

**Cinnamon Drive** is an existing two-lane undivided collector in the vicinity of the proposed Project. In this area, Cinnamon Drive extends east of its connection to 19 ½ Avenue and changes orientation to intersect Hanford-Armona Road. Cinnamon Drive is a two-lane collector divided by a two-way left-turn lane between 19½ Avenue and Lemoore Avenue and a two-lane undivided collector east of Lemoore Avenue and south of Hanford-Armona Road. The City General Plan Circulation Element designates Cinnamon Drive as a four-lane collector between 19 ½ Avenue and Lemoore Avenue and a two-lane collector between Lemoore Avenue and Hanford-Armona Road.

**Lacey Boulevard** is an existing east-west two-lane local roadway adjacent to the proposed Project. In this area, Lacey Boulevard is a two-lane undivided major collector through the County of Kings. The County of Kings 2035 General Plan designates Lacey Boulevard as a local major collector.

**Glendale Avenue** is an existing east-west two-lane undivided local roadway in the vicinity of the proposed Project. In this area, Glendale Avenue is a two-lane undivided local roadway that exists between Deodar Drive and Quandt Drive. The City General Plan Circulation Element designates Glendale Avenue as a local roadway.

**Spruce Avenue** is an existing east-west two-lane undivided local roadway in the vicinity of the proposed Project. In this area, Spruce Avenue is a two-lane undivided local roadway that exists between Spring Lane and Ashland Drive. The City General Plan Circulation Element designates Spruce Avenue as a local roadway.

**Hanford-Armona Road** is an existing east-west two-lane arterial in the vicinity of the proposed Project. In this area, Hanford-Armona Road is a two-lane undivided local

roadway west of SR 41, a two- to three-lane arterial divided by a two-way left-turn lane between SR 41 and Lemoore Avenue, a four-lane undivided arterial between Lemoore Avenue and Cinnamon Drive and a two-lane undivided arterial east of Cinnamon Drive. The City General Plan Circulation Element designates Hanford-Armona Road as a four- to six-lane arterial between College Drive and Bennington Avenue.

Public Transportation Services

Kings Area Rural Transit (KART), the transit operator in the City of Lemoore, provides fixed-route service. At present, there are no KART fixed routes that operate in the vicinity of the proposed Project. The closest is KART Route 20 – Lemoore, which runs on Hanford-Armona Road, approximately 0.71 miles to the southwest corner of the proposed Project. Route 20 operates at 30-minute intervals on Monday through Friday from 6:05 AM to 5:35 PM and 30-minute intervals on Saturday from 9:35 AM to 3:35 PM. The nearest stop to the Project site is located on the north side of Hanford-Armona Road approximately 575 feet east of Lemoore Avenue. This Route provides a direct connection to the KART Transit Center, Armona Senior Center, Heritage Park, Pioneer Square, Lemoore High School, City Park, Lemoore Depot and Liberty Middle school. Retention of the existing and expansion of future transit routes is dependent of transit ridership demand and available funding.

Non-Motorized Transportation

*Bicycle Lanes*

Currently, Class II Bike Lanes exist in the vicinity of the proposed Project site along Hanford-Armona Road, 19th Avenue, Lemoore Avenue, Liberty Drive and Cinnamon Drive. The City General Plan and the 2011 Kings County Regional Bicycle Plan proposed to add bike lanes on Spruce Avenue, Cinnamon Drive, Hanford-Armona Road east of SR 41 and on the entirety of the 19th Avenue expansion north of Hanford-Armona Road.

*Walkways*

Currently, walkways exist in the vicinity of the proposed Project site along Hanford-Armona Road, the south side of Glendale Avenue, Spruce Avenue, 19th Avenue, Liberty Drive, Lemoore Avenue and Cinnamon Drive. A goal of the 2011 Kings County Regional Bicycle Plan is to provide for pedestrian-friendly zones in conjunction with the development, redevelopment, and design of mixed-use neighborhood core areas, the downtown center, schools, parks, and other high use areas. The Project is proposing to install approximately 1.64 acres of trail areas within the development.

## Regulatory Setting

Federal Regulations

Several federal regulations govern transportation issues. They include:

- Title 49, CFR, Sections 171-177 (49 CFR 171-177), governs the transportation of hazardous materials, the types of materials defined as hazardous, and the marking of the transportation vehicles.
- 49 CFR 350-399, and Appendices A-G, Federal Motor Carrier Safety Regulations, address safety considerations for the transport of goods, materials, and substances over public highways.
- 49 CFR 397.9, the Hazardous Materials Transportation Act of 1974, directs the U.S. Department of Transportation to establish criteria and regulations for the safe transportation of hazardous materials.

State of California Regulations

*California Department of Transportation*

The California State Department of Transportation (Caltrans) has jurisdiction over state highways and sets maximum load limits for trucks and safety requirements for oversized vehicles that operate on California highways. Kings County is under the jurisdiction of Caltrans District 6. The following Caltrans regulations apply to the potential transportation impacts of the Project:

- California Vehicle Code, Division 15, Chapters 1 through 5 (Size, Weight, and Load). Includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways.
- California Street and Highway Code, Sections 660-711, 670-695. Requires permits from Caltrans for any roadway encroachment during truck transportation and delivery, includes regulations for the care and protection of state and county highways and provisions for the issuance of written permits, and requires permits for any load that exceeds Caltrans weight, length, or width standards for public roadways.

*Assembly Bill 32 (Global Warming Act of 2006) and Senate Bill 375*

Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006 (Act), requires California to reduce its greenhouse gas (GHG) emissions to levels presented in the year 1990 by

2020. In response, the California Air Resources Board (CARB) is responsible for creating guidelines for this Act. In 2008, CARB adopted its proposed Scoping Plan, which included the approval of Senate Bill (SB) 375 as a means of achieving regional transportation-related GHG targets. SB 375 provides guidance on how curbing emissions from cars and light trucks helps the State comply with AB 32.

Established through CARB, SB 375 lists four major components and requirements: (1) it requires regional GHG emissions targets; (2) it requires creating a Sustainable Communities Strategy (SCS) that provides a plan for meeting the regional targets; (3) it requires that regional housing elements and transportation plans be synchronized on 8-year schedules; and (4) it requires transportation and air pollutant emissions modeling techniques consistent with guidelines prepared by the California Transportation Commission (CTC).

*Senate Bill 743*

Senate Bill (SB) 743 was approved by then Governor Brown on September 27, 2013. SB 743 created a path to revise the definition of transportation impacts according to California Environmental Quality Act (CEQA). The revised CEQA Guidelines requiring a vehicle miles traveled (VMT) analysis became effective December 28, 2018; however, agencies had until July 1, 2020 to finalize their local guidelines on VMT analysis. The intent of SB 743 is to align CEQA transportation study methodology with and promote the statewide goals and policies of reducing VMT and greenhouse gases (GHG). Three objectives of SB 743 related to development are to reduce GHG, diversify land uses, and focus on creating a multimodal environment.

<u>Local Regulations</u>

*Kings County Association of Governments – Regional Transportation Plan*

KCAG is required to develop a comprehensive long-range planning document or Regional Transportation Plan (RTP) every four years. The RTP establishes regional goals, identifies present and future needs, deficiencies and constraints, and fiscally constrained infrastructure improvements. The RTP discusses the major transportation issues in the Kings County region including state highways, transportation systems management, and transportation control measures.

The RTP represents an accumulation of all the plans and programs adopted by the local agencies, including the cities of Avenal, Corcoran, Hanford, and Lemoore in addition to the unincorporated communities of Kings County.

*Lemoore General Plan*

The following lists goals and policies from the Lemoore 2030 General Plan pertaining to transportation that are applicable to the proposed Project.

C-I-7 Develop and manage the roadway system to obtain Level of Service (LOS) D or better for two hour peak periods (a.m. and p.m.) on all major roadways and arterial intersections in the City. This policy does not extend to local residential streets (i.e., streets with direct driveway access to homes) or state highways and their intersections, where Caltrans policies apply. Exceptions to LOS D policy may be allowed by the City Council in areas, such as Downtown, where allowing a lower LOS would result in clear public benefits, social interaction and economic vitality, and help reduce overall automobile use.

*No new development will be approved unless it can be shown that required LOS can be maintained on affected roadways either through this General Plan documentation or more specific traffic studies conducted through the City where appropriate.*

C-I-9 Establish a Transportation Performance Monitoring (TPM) program for the Business, Technology, and Industrial Reserve Area, generally located in the southwest quadrant of SR-198 and SR-41, to monitor and control traffic arising from new development.

*Development occurring within the TPM program area or any other such designated portion of the City must submit data to the City Engineer to calculate the number of site trips generated per developable acre. Within this area, development "caps" will be assigned to maintain service levels within traffic analysis zones (TAZs). These "caps" will be developed through density thresholds while monitoring roads and intersections for each land use category allowed per gross 1,000 square feet area. Developers must provide data to the City Traffic Engineer for site trip calculations and reduce the number of housing units or size of non-residential buildings if the number of trips exceeds the allowed cap to gain development approval. The City will maintain a "trip ledger" showing all site trips that have been approved for each TAZ, with allocations made on the basis of receipt of a Certificate of Reservation of Site Trips or a building permit application. The City Council will periodically review the trip generation rates and allowable adjustments and exceptions established for the TPM program and the trip allocations by TAZ, and allow for recalculation of the maximum number of site trips allowed based on approved changes in trip generation rates or other adjustment factors. Details on how trip generation rates are established, how site trips are calculated, how the trip ledger is maintained, how exceptions are granted and what happens when unallocated site trips are unavailable will be included in the ordinance establishing the TPM once a Specific Plan has been developed.*

C-I-10 Require traffic impact studies for any proposed General Plan amendment that will generate significant amounts of traffic (such as 100 or more peak hour trips).

*Specific thresholds will be based on location and project type, and exceptions may be granted where the traffic generation is consistent with the assumptions made for this General Plan or traffic studies have been completed for adjacent development and the City knows what mitigation, if any, will ensure that LOS standards will be maintained. The City's new traffic model developed for the 2030 General Plan will facilitate this analysis. Detailed intersection and queuing analyses may be required to determine site specific improvements as circumstances warrant.*

C-I-11 Establish and implement additional programs to maintain adequate peak hour LOS at intersections and along roadway segments as circumstances warrant, including the following actions:

- Collect and analyze traffic volume data on a regular basis (at least every 5 years) and monitor current intersection and roadway segment levels of service on a regular basis. Use this information to update and refine the City's travel forecasting model, so that estimates of future conditions are more strongly based upon local travel behavior and trends.
- Consider, on a case by case basis, how to shift travel demand away from the peak period by changing work shift starting times, especially in those situations where peak traffic problems result from a few major generators (e.g. the West Hills College area and Bush Street corridor and the Industrial Area south of the City).
- Perform routine, ongoing evaluation of the efficiency of the urban street traffic control system, with emphasis on traffic signal timing, phasing and coordination to optimize traffic flow along arterial corridors. Use traffic control systems to balance arterial street utilization (e.g. timing and phasing for turn movements, peak period and off-peak signal timing plans).

*To assure acceptable traffic operating standards over time, the Public Works Department will conduct on-going traffic counts and the City Engineer or other designee will monitor conditions on an ongoing basis and apply applicable remedial measures as needed.*

## Thresholds of Significance

In accordance with the CEQA Guidelines, a project impact would be considered significant if the project would:

- Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?
- Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
- Result in inadequate emergency access?

## Analysis Methodology

The information and analysis presented in this Section are based on the Traffic Impact Analysis and the Vehicle Miles Traveled Analysis prepared for the Project by JLB Traffic Engineering, Inc. a (Appendix I-1 and I-2) These studies analyzed the potential impacts the proposed Project would have on the existing roadway and transportation system. This was prepared in general conformance with City of Lemoore requirements and *Caltrans Guide for the Preparation of Traffic Impact Studies*. The TIA and VMT Reports provide an analysis of the surrounding roadway system and the effects of the proposed Project on the existing and planned roadway infrastructure, including potential mitigation measures to reduce Project transportation impacts.

<u>Intersection Analysis</u>

*Level of Service Analysis Methodology*

Level of Service (LOS) is a qualitative index of the performance of an element of the transportation system. LOS is a rating scale running from “A” to “F”, with “A” indicating no congestion of any kind and “F” indicating unacceptable congestion and delays. LOS in this study describes the operating conditions for signalized and unsignalized intersections.

The *Highway Capacity Manual* (HCM) is the standard reference published by the Transportation Research Board and contains the specific criteria and methods to be used in assessing LOS. Synchro software was used to define LOS in this study. Details regarding these calculations are included in Appendix D of Appendix I-1.

**Criteria of Significance.** The City of Lemoore 2030 General Plan does not currently have any adopted LOS standard. However, recent traffic studies have utilized LOS D as the acceptable level of traffic congestion. Therefore, LOS D is used to evaluate the potential significant of LOS impacts to City of Lemoore roadway facilities.

The County of Kings 2035 General Plan has established a minimum LOS standard within the County, which should be no lower than LOS E for urban areas and LOS D for rural areas. For this TIA, LOS D is used to evaluate the potential significance of LOS impacts to intersections within the County of Kings.

All study facilities studied for the proposed Project fall within either the City or the County of Kings boundaries. Therefore, the County of Kings rural LOS threshold of LOS D is utilized to evaluate the potential significance of LOS impacts.

*Analysis Locations*

**Study Facilities.** The study focused on evaluating traffic conditions at the existing study intersections that may potentially be impacted by the proposed Project. The COVID-19 situation impacted traffic volumes in Lemoore for which new physical counts would not be representative to typical conditions. For this reason, historic and current turning movement counts for the study intersections of 19th Avenue and Hanford-Armona Road and Liberty Drive and Hanford-Armona Road were used. The historic turning movement counts were conducted in May 2019 and the new turning movement counts were conducted in October 2020. All of the intersection turning movement counts include pedestrian and bicycles volumes. When the historical and current counts were compared, the historical count had higher volumes. In order to properly analyze the study intersections, an expansion factor between historic and current traffic counts was determined for each peak period based on methodology agreed upon with the City. The expansion factors were calculated to be 48% in the AM peak period and 8% in the PM peak period. All of the current traffic counts were then expanded by these factors in their respective peaks. The volumes resulting from this process were used as the Existing turning movement volumes. The traffic counts for the existing study intersections are contained in Appendix B of Appendix I-1.

**Study Intersections:**

1. 18 ¾ Avenue / Lacey Boulevard
2. Lemoore Avenue / Lacey Boulevard
3. Mary Drive / Lacey Boulevard
4. 17th Avenue (North Leg) / Lacey Boulevard
5. 17th Avenue (South Leg) / Lacey Boulevard

6. Lemoore Avenue / Project Driveway
7. Lemoore Avenue / Glendale Avenue
8. Lemoore Avenue / Spruce Avenue
9. 19th Avenue / Hanford-Armona Road
10. Liberty Drive / Hanford-Armona Road
11. Cinnamon Drive / Hanford-Armona Road

**Project Only Trip Assignment to State Facilities:**

1. SR 41 / Lacey Boulevard
2. SR 41 / Hanford-Armona Road

*Analysis Time Periods and Scenarios*

The study time periods include the peak hours determined within each of the following conditions:

- Existing Conditions;
- Existing-Plus-Project Conditions;
- Near-Term Plus-Project Conditions
- Cumulative Year 2042 No-Project Conditions; and
- Cumulative Year 2042 Plus-Project Conditions.

The Project will develop approximately 156 acres of vacant land into an 825-unit residential community with a mix of single-family and multi-family housing units.

## Impacts and Mitigation Measures

**Impact 3.14-1:** *Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?*

**Less than Significant Impact With Mitigation**.

Construction Traffic

Construction of the Project could result in temporary increase in traffic volumes and disruption of traffic flow during construction activities. The Project may require lane closures, minor detours and other traffic disrupting activities during construction. However, the Project site will be accessible via the surrounding roadways, temporary access lanes and/or other methods to ensure

that emergency access will be maintained throughout construction. The construction contractor will be required to coordinate with the City during construction activities to maintain adequate emergency access. Mitigation measure TRA-2 includes a requirement to prepare a Traffic Control Plan during construction which will ensure that impacts from construction traffic are less than significant.

Existing Traffic

Table 3.14-1 presents pre-Project (existing) traffic conditions in the Project area. As of October 2021, all study intersections operate at an acceptable LOS during both peak periods.

**Table 3.14-1**
**Existing Intersection LOS Results**

| ID | Intersection | Intersection Control | AM (7-9) Peak Hour | | PM (4-6) Peak Hour | |
|---|---|---|---|---|---|---|
| | | | Average Delay (sec/veh) | LOS | Average Delay (sec/veh) | LOS |
| 1 | 18 ¾ Avenue / Lacey Boulevard | One-Way Stop | 10.6 | B | 9.8 | A |
| 2 | Lemoore Avenue / Lacey Boulevard | All-Way Stop | 10.8 | B | 11.2 | B |
| 3 | Mary Drive / Lacey Boulevard | Does Not Exist | N/A | N/A | N/A | N/A |
| 4 | 17th Avenue (NL) / Lacey Boulevard | One-Way Stop | 10.2 | B | 11.1 | B |
| 5 | 17th Avenue (SL) / Lacey Boulevard | One-Way Stop | 10.3 | B | 10.6 | B |
| 6 | Lemoore Avenue / Street 'S' | Does Not Exist | N/A | N/A | N/A | N/A |
| 7 | Lemoore Avenue / Glendale Avenue | Two-Way Stop | 13.9 | B | 12.4 | B |
| 8 | Lemoore Avenue / Spruce Avenue | Two-Way Stop | 16.7 | C | 13.7 | B |
| 9 | 19th Avenue / Hanford-Armona Road | One-Way Stop | 11.6 | B | 12.4 | B |
| 10 | Liberty Drive / Hanford-Armona Road | One-Way Stop | 21.1 | C | 18.8 | C |
| 11 | Cinnamon Drive/ Hanford-Armona Road | One-Way Stop | 15.9 | C | 20.0 | C |

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Project Access

Based on the proposed Tentative Tract Map (See Figure 4 – Site Plan in Chapter Two – Project Description), access to and from the Project site will be from a total eight main access points. Two of the access points will be located along the south side of Lacey Boulevard approximately 1,300 and 2,600 feet east of Lemoore Avenue and are proposed as full access. The easternmost of these two access points will initially act as an emergency access only but will be built out as a local roadway upon completion of Phase II of the Project. Three of the access points will be located along the east side of Lemoore Avenue approximately 820, 1,535 and 1,885 feet south of Lacey Boulevard and are all currently proposed as full access points. One of the access points will be

located along the north side of Glendale approximately 345 feet east of Lemoore Avenue and is proposed as full access. One of the access points will be on the south side of the Project at Ashland Drive. A ninth access point will be located along the east side of the Project but will not be connected to any exterior roads at initial Project buildout. The location of the proposed access points was analyzed relative to the existing local roads and driveways in the Project's vicinity. A review of the Project access points to be constructed indicates that they are located at points that minimize traffic operational impacts to the existing roadway network.

Trip Generation

Trip generation rates for the proposed Project were obtained from the *10th Edition of the Trip Generation Manual published by the Institute of Transportation Engineers* (ITE). Table 3.14-2 presents the trip generation for the proposed Project with trip generation rates for Single-Family Detached Housing (210), Multifamily Housing (Low-Rise) (220) and Public Park (411). As shown in Table 3.14-2, the proposed Project is estimated to generate a maximum of 7,362 daily trips, 554 AM peak hour trips and 730 PM peak hour trips.

**Table 3.14-2**
**Proposed Project Trip Generation**

| Land Use (ITE Code) | Size | Unit | Daily | | AM (7-9) Peak Hour | | | | | | PM (4-6) Peak Hour | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Rate | Total | Trip Rate | In % | Out % | In | Out | Total | Trip Rate | In % | Out % | In | Out | Total |
| Single-Family Detached Housing (210) | 621 | d.u. | 9.44 | 5,862 | 0.74 | 25 | 75 | 115 | 345 | 460 | 0.99 | 63 | 37 | 387 | 228 | 615 |
| Multifamily Housing (Low-Rise) (220) | 204 | d.u. | 7.32 | 1,493 | 0.46 | 23 | 77 | 22 | 72 | 94 | 0.56 | 63 | 37 | 72 | 42 | 114 |
| Public Park (411) | 9.540 | acres | 0.78 | 7 | 0.02 | 59 | 41 | 0 | 0 | 0 | 0.11 | 55 | 45 | 1 | 0 | 1 |
| ***Total Project Trips*** | | | | **7,362** | | | | **137** | **417** | **554** | | | | **460** | **270** | **730** |

Note: d.u. = Dwelling Units

Existing Plus Project

The Existing plus Project Traffic Conditions scenario assumes that internal streets including Mary Drive and Street 'S' are added to the roadway network. It is also assumed that additions include a westbound left-turn lane at the intersection of Mary Drive and Lacey Boulevard and a two-way left-turn lane along Lemoore Avenue between Lacey Boulevard and approximately 600 feet north of Glendale Avenue. Figure 5 of Appendix I-1 illustrates the Existing plus Project turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Existing plus Project Traffic Conditions scenario are provided in Appendix F of Appendix I-1. Table 3.14-3 presents a summary of the Existing plus Project peak hour LOS at the study intersections.

**Table 3.14-3**
**Existing Plus Project Intersection LOS Results**

| ID | Intersection | Intersection Control | AM (7-9) Peak Hour | | PM (4-6) Peak Hour | |
|---|---|---|---|---|---|---|
| | | | Average Delay (sec/veh) | LOS | Average Delay (sec/veh) | LOS |
| 1 | 18 ¾ Avenue / Lacey Boulevard | One-Way Stop | 10.7 | B | 9.9 | A |
| 2 | Lemoore Avenue / Lacey Boulevard | All-Way Stop | 11.4 | B | 12.3 | B |
| 3 | Mary Drive / Lacey Boulevard | One-Way Stop | 10.1 | B | 10.4 | B |
| 4 | 17th Avenue / Lacey Boulevard (North Leg) | One-Way Stop | 11.0 | B | 12.5 | B |
| 5 | 17th Avenue / Lacey Boulevard (South Leg) | One-Way Stop | 11.2 | B | 11.9 | B |
| 6 | Lemoore Avenue / Street S | One-Way Stop | 13.7 | B | 14.5 | B |
| 7 | Lemoore Avenue / Glendale Avenue | Two-Way Stop | 21.2 | C | 23.0 | C |
| 8 | Lemoore Avenue / Spruce Avenue | Two-Way Stop | 30.2 | D | 23.8 | C |
| 9 | 19th Avenue / Hanford-Armona Road | One-Way Stop | 11.8 | B | 12.9 | B |
| 10 | Liberty Drive / Hanford-Armona Road | Two-Way Stop | 23.9 | C | 20.6 | C |
| 11 | Cinnamon Drive / Hanford-Armona Road | Two-Way Stop | 16.4 | C | 20.6 | C |

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Under this scenario, all study intersections are projected to operate at an acceptable LOS during both peak periods.

<u>Near Term Plus Project</u>

This scenario analyzes the impacts of the Near Term Plus Project. This consists of an analysis of the Project's impacts in the Near Term along with Approved and Pipeline Projects that consist of developments that are either under construction, built but not fully occupied, are not built but have final site development review (SDR) approval, or for which the lead agency or responsible agencies have knowledge of. The City of Lemoore, County of Kings and Caltrans staff were consulted throughout the preparation of the TIA regarding approved and/or known projects that could potentially impact the study intersections.

The Near Term plus Project Traffic Conditions scenario assumes that the Existing plus Project roadway geometrics and traffic controls will remain in place. Figure 7 of Appendix I-1 illustrates the Near Term plus Project turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Near Term plus Project Traffic Conditions scenario are provided in Appendix G of Appendix I-1. Table 3.14-4 presents a summary of the Near Term plus Project peak hour LOS at the study intersections.

**Table 3.14-4**
**Near Term Plus Project Intersection LOS Results**

| ID | Intersection | Intersection Control | AM (7-9) Peak Hour | | PM (4-6) Peak Hour | |
|---|---|---|---|---|---|---|
| | | | Average Delay (sec/veh) | LOS | Average Delay (sec/veh) | LOS |
| 1 | 18 ¾ Avenue / Lacey Boulevard | One-Way Stop | 10.9 | B | 10.2 | B |
| 2 | Lemoore Avenue / Lacey Boulevard | All-Way Stop | 11.5 | B | 12.6 | B |
| 3 | Mary Drive / Lacey Boulevard | One-Way Stop | 10.2 | B | 10.6 | B |
| 4 | 17th Avenue / Lacey Boulevard (North Leg) | One-Way Stop | 11.1 | B | 12.7 | B |
| 5 | 17th Avenue / Lacey Boulevard (South Leg) | One-Way Stop | 11.3 | B | 12.0 | B |
| 6 | Lemoore Avenue / Street S | One-Way Stop | 13.7 | B | 14.5 | B |
| 7 | Lemoore Avenue / Glendale Avenue | Two-Way Stop | 21.4 | C | 23.3 | C |
| 8 | Lemoore Avenue / Spruce Avenue | Two-Way Stop | 31.1 | D | 24.1 | C |
| 9 | 19th Avenue / Hanford-Armona Road | One-Way Stop | 15.1 | C | 15.5 | C |
| 10 | Liberty Drive / Hanford-Armona Road | Two-Way Stop | **46.5** | **E** | 32.5 | D |
| | | Signalized (Improved) | 17.1 | B | 16.3 | B |
| 11 | Cinnamon Drive / Hanford-Armona Road | Two-Way Stop | 16.7 | C | 20.8 | C |

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Under this scenario, the study intersection of Liberty Drive and Hanford-Armona Road is projected to operate at an unacceptable LOS during the AM peak period. To improve the LOS at this intersection, it is recommended that the following improvement be implemented.

- Liberty Drive / Hanford-Armona Road
  - Signalize the intersection with protected left-turn phasing in all directions while retaining the existing lane geometrics.

<u>Cumulative Year 2042 Plus Project Scenario</u>

The Cumulative Year 2042 plus Project Traffic Conditions scenario assumes that the existing plus Project roadway geometrics and traffic controls will remain in place. Figure 9 of Appendix I-1 illustrates the Cumulative Year 2042 plus Project turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Cumulative Year 2042 plus Project Traffic Conditions scenario are provided in Appendix I of Appendix I-1. Table 3.14-5 presents a summary of the Cumulative Year 2042 plus Project peak hour LOS at the study intersections.

**Table 3.14-5**
**Cumulative Year 2042 Plus Project Intersection LOS Results**

| ID | Intersection | Intersection Control | AM (7-9) Peak Hour | | PM (4-6) Peak Hour | |
|---|---|---|---|---|---|---|
| | | | Average Delay (sec/veh) | LOS | Average Delay (sec/veh) | LOS |
| 1 | 18 ¾ Avenue / Lacey Boulevard | One-Way Stop | 11.2 | B | 10.4 | B |
| 2 | Lemoore Avenue / Lacey Boulevard | All-Way Stop | 12.1 | B | 15.2 | C |
| 3 | Mary Drive / Lacey Boulevard | One-Way Stop | 10.2 | B | 10.7 | B |
| 4 | 17th Avenue / Lacey Boulevard (North Leg) | One-Way Stop | 11.1 | B | 13.0 | B |
| 5 | 17th Avenue / Lacey Boulevard (South Leg) | One-Way Stop | 11.4 | B | 16.2 | C |
| 6 | Lemoore Avenue / Street S | One-Way Stop | 13.7 | B | 14.8 | B |
| 7 | Lemoore Avenue / Glendale Avenue | Two-Way Stop | 27.1 | D | 28.8 | D |
| 8 | Lemoore Avenue / Spruce Avenue | Two-Way Stop | 32.3 | D | 24.1 | C |
| 9 | 19th Avenue / Hanford-Armona Road | One-Way Stop | 15.1 | C | 16.1 | C |
| 10 | Liberty Drive / Hanford-Armona Road | Two-Way Stop | **46.5** | **E** | **36.0** | **E** |
| | | Signalized (Improved) | 17.1 | B | 19.6 | B |
| 11 | Cinnamon Drive / Hanford-Armona Road | Two-Way Stop | 17.9 | C | 25.9 | D |

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls.
LOS for two-way STOP controlled intersections are based on the worst approach/movement of the minor street.

Under this scenario, the study intersection of Liberty Drive and Hanford-Armona Road is projected to operate at an unacceptable LOS during both peak periods. To improve the LOS at this intersection, it is recommended that the following improvement be implemented.

- Liberty Drive / Hanford-Armona Road
  - Signalize the intersection with protected left-turn phasing in all directions while retaining the existing lane geometrics.

Mitigation measure TRA-1 will require the developer to pay a per rata share for the improvement needed at the intersection of Liberty Drive and Hanford-Armona Road. With implementation of TRA-1, the level of service and traffic flow in the Project area will remain acceptable and impacts would be less than significant.

Traffic Control Planning

Because traffic volumes on many of the roadways are minimal, utilization of traffic control signs acceptable to the City are recommended to identify locations where construction workers or construction-related trucks and heavy equipment would turn onto and off local roadways to access the project site. Mitigation Measure TRA-2 would require that all oversize vehicles used on public roadways during construction obtain required permits and obtain approval of a Construction Traffic Control Plan, as well as identify anticipated construction delivery times and vehicle travel routes in advance to minimize construction traffic during a.m. and p.m. peak hours.

This would ensure that construction-related oversize vehicle loads are in compliance with applicable California Vehicle Code sections and California Street and Highway Codes applicable to licensing, size, weight, load, and roadway encroachment of construction vehicles. Implementation of TRA-2 would reduce temporary construction related traffic impacts to less than significant levels.

**Mitigation Measures:**

**TRA-1** Prior to issuance of building permit, the Project shall pay its fair share cost percentages and/or construct the recommended improvements as determined by the City. The following are the required improvements:

- **Liberty Drive / Hanford-Armona Road**
  - Signalize the intersection with protected left-turn phasing in all directions while retaining the existing lane geometrics.

**TRA-2** Prior to the issuance of construction or building permits, the project developer shall:

1. Obtain all necessary encroachment permits for work within the road right-of-way or use of oversized/overweight vehicles that will utilize City-maintained roads, which may require California Highway Patrol or a pilot car escort. Copies of the approved traffic plan and issued permits shall be submitted to the City of Lemoore Community Development Department and Public Works Department-Development Review.

2. Prepare and submit a Construction Traffic Control Plan to City of Lemoore Public Works Department-Development Review and the Community Development Department, as appropriate, for approval. The Construction Traffic Control Plan shall be prepared in accordance with both the California Department of Transportation Manual on Uniform Traffic Control Devices and Work Area Traffic Control Handbook and shall include, but not be limited to, the following issues:

   a. Timing of deliveries of heavy equipment and building materials;

   b. Directing construction traffic with a flag person;

   c. Placing temporary signing, lighting, and traffic control devices if required, including, but not limited to, appropriate signage along access routes to indicate the presence of heavy vehicles and construction traffic;

   d. Ensuring access for emergency vehicles to the project site;

e. Temporarily closing travel lanes or delaying traffic during materials delivery, transmission line stringing activities, or any other utility connections;

f. Maintaining access to adjacent property; and,

g. Specifying both construction-related vehicle travel and oversize load haul routes, minimizing construction traffic during the AM and PM peak hour, distributing construction traffic flow across alternative routes to access the project sites, and avoiding residential neighborhoods to the maximum extent feasible.

After implementation of Mitigation Measure TRA-1 and TRA-2, the Project's impacts would be reduced to a ***less than significant*** level**.**

**Impact 3.14-2:** *Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?*

**Significant and Unavoidable With Mitigation**. JLB Traffic Engineering, Inc. prepared a Vehicle Miles Traveled Analysis (Appendix I-2) that analyzes the potential impacts the proposed Project would have on the existing roadway and transportation system. Neither the City of Lemoore nor Kings CAG have adopted guidelines or thresholds for VMT pursuant to Senate Bill 743. For this reason, this VMT analysis follows the guide of the December 2018 *Technical Advisory on Evaluating Transportation Impacts in CEQA* (TA) published by the Governor's Office of Planning and Research (OPR) and the August 2010 Quantifying *Greenhouse Gas Mitigation Measures* published by the California Air Pollution Control Officers Association (CAPCOA) to analyze the Project's VMT.

The TA contains screening standard and criteria that can be used to screen out qualified development projects that meet the adopted criteria from needing to prepare a detailed VMT Analysis. These criteria may be size, location, proximity to transit or trip making potential. In general development projects that meet one or more of the following criteria can be screened out from a quantitative VMT analysis. In this case, the Project does not meet any of the screening criteria.

For projects that are not screened out, a quantitative analysis of VMT impacts must be prepared and compared against the adopted VMT thresholds of significance. According to the TA, residential developments that generate vehicle travel that is 15 percent or more below the existing residential VMT per capita, measured against the region, are considered to have a less-than-significant transportation impact. The threshold of significance was developed using the County of Kings as the applicable region, and the required reduction of VMT corresponds to Kings

County's contribution to the statewide GHG emission reduction target. In order to reach the statewide GHG reduction target of 15%, County of Kings must reduce its GHG emissions by 15%. The method of reducing GHG by 15% is to reduce VMT by 15% as well.

**Baseline VMT**

The Project's trip generation, number of residential units, and square footages of non-residential uses were provided to KCAG in order to conduct a Project-specific VMT analysis using the KCAG model for specific Project components. Based on KCAG VMT results, Project components containing residential land uses are projected to yield an average VMT per capita of 9.29, which exceeds the VMT threshold for residential uses of 8.16 VMT per capita. As a result, it is recommended that the Project implement VMT mitigation measures for the residential component to reduce VMT per Capita. Appendix A of Appendix I-1 presents the Project VMT outputs from the KCAG model.

**Development of VMT Mitigation Measures**

The VMT mitigation measures that were considered feasible for this Project include the following: increasing destination accessibility, locate project near bike path/bike lane, improve design of development, provide pedestrian network improvements, provide traffic calming measures, incorporate bike lane street design (on-site), provide bike parking with multi-unit residential projects and dedicate land for bike trails. Worth noting that VMT mitigation measures such as utilize neighborhood electric vehicles (NEVs), provide electric vehicle parking and expanding transit network, to name a few, were not accounted for in the VMT analysis for the proposed Project. For example, the Project will be fitted with bus bays, but due to the improbability that a transit route gets added or expanded, the VMT reduction from this mitigation were not included in the calculations to present a conservative analysis of the Project's VMT. Also, providing NEVs to residents will not effectively reduce VMT per capita unless the Project connects to a greater NEV network that provides NEV access to a variety of land uses. It is estimated that given the design elements associated with the Project and the surrounding multi-modal network, the Project will benefit from reductions in VMT as a result of other measures. Since these measures are not implemented without justification, only the measures presented within this report were considered for this analysis as part of the VMT mitigation measures. These measures are appropriate for residential, office, retail, mixed-use and industrial projects in urban or suburban context. A description of the VMT mitigation measures and reduction rates are as follows:

Land-Use/Location (Maximum Reduction: 5.00%)

- **LUT-4: Increase Destination Accessibility**
  - VMT Mitigation Method: VMT Reduction (%) = (12 - 8)/12 * 0.2 = 6.67% (CAPCOA 2010)
    - VMT Reduction (%) = Center Distance * B (not to exceed 30%), where
      - Center Distance = (12 - Distance to downtown/job center for Project) / 12
      - B = Elasticity of VMT with respect to distance to downtown or major job center [use 0.2]
  - It is recommended that the Project implement bicycle facilities within and adjacent to the Project site. Within the Project boundaries the following is recommended:
    - Class I Bikeways be constructed along:
      - South side of Street 'S' between Lemoore Avenue and the eastern boundary of the Project and
      - Street 'G' between Street 'S' and Street 'P'.
    - Class II Bikeways be constructed along
      - Street 'S' between Lemoore Avenue and the eastern boundary of the Project
      - Mary Drive between Street 'I' and Lacey Boulevard.
      - Project frontages along Lemoore Avenue between Lacey Boulevard and Glendale Avenue
      - Project frontage along Lacey Boulevard between Lemoore Avenue the eastern boundary of the Project.
  - The effectiveness of this measure will depend largely on the Project location and increasing potential for pedestrians to walk and bike to central locations (CAPCOA 2010).

- **LUT-8: Locate project near bike path/bike lane**
  - It is recommended that the Project implement bicycle facilities within and adjacent to the Project site. Within the Project boundaries it is recommended that Class I Bikeways the following is recommended:
    - South side of Street 'S' between Lemoore Avenue and the eastern boundary of the Project.
    - Street 'G' between Street 'S' and Street 'P'.
  - Class II Bikeways be constructed along:

- Street 'S' between Lemoore Avenue and the eastern boundary of the Project
- Mary Drive between Street 'I' and Lacey Boulevard.
- Project frontages to Lemoore Avenue between Lacey Boulevard and Glendale Avenue.
- Project frontages along Lacey Boulevard between Lemoore Avenue the eastern boundary of the Project.The effectiveness of this measure will depend largely on its implementation as a stand-alone strategy or in combination with multiple design elements that increase opportunities for multi-modal travel (CAPCOA 2010).

- **LUT-9: Improve Design of Development**
  - VMT Mitigation Measure: VMT Reduction (%) = ((58-36)/36) * 0.12 = 7.33% (CAPCOA 2010)
    - VMT Reduction (%) = (Intersection per square mile of project - Typical intersection per square mile) / Typical intersection per square mile (not to exceed 500%), where:
      - Intersection per square mile of project = 14 intersections / 0.24 square miles = 58.33
      - Typical intersection per square mile = 36
  - The effectiveness of this measure will depend largely on its implementation as a stand-alone strategy or in combination with multiple design elements that increase opportunities for multi-modal travel (CAPCOA 2010).

<u>Neighborhood/Site Design (Max. Reduction: 5.00%)</u>

- **SDT-1: Provide Pedestrian Network Improvements**
  - It is recommended that the Project implement bicycle facilities within and adjacent to the Project site.
  - Within the Project it is recommended that Class I Bikeways be constructed along the following:
    - South side of Street 'S' between Lemoore Avenue and the eastern boundary of the Project.
    - Street 'G' between Street 'S' and Street 'P'.
  - Also, within the Project it is recommended that Class II Bikeways be constructed along the following:
    - Street 'S' between Lemoore Avenue and the eastern boundary of the Project.
    - Mary Drive between Street 'I' and Lacey Boulevard.

        - Project frontages along Lemoore Avenue between Lacey Boulevard and Glendale Avenue.
        - Project frontages along Lacey Boulevard between Lemoore Avenue the eastern boundary of the Project.
    - The effectiveness of this measure requires providing a pedestrian access network that internally links all uses and connects to all existing or planned external streets and pedestrian facilities contiguous with the Project site (CAPCOA 2010).

- **SDT-2: Provide Traffic Calming Measures**
        - Percentage of intersections with improvement: 25%
        - Percentage of streets with improvements: 100%
    - The Project will incorporate intersection traffic calming features such as mini-circles at the following intersections
        - Beverly Drive and Street 'S',
        - Street 'G' and Street 'S',
        - Street 'L' and Street 'S',
        - Street 'C' and Street 'I',
        - Street 'D' and Street 'I',
        - Mary Drive and Street 'I'
        - Street 'A' and Street 'F'.
    - The Project will incorporate street traffic calming features including on street parking throughout the Project (excluding Street 'S') along the following:
        - Between Lemoore Avenue and the eastern boundary of the Project
        - Mary Drive between Lacey Boulevard and Street 'J',
        - Median islands on Street 'S' between Lemoore Avenue and the Street 'D'
        - Mary Drive between Lacey Boulevard and Street 'I',
        - Planter strips with street trees throughout the Project.
    - The effectiveness of this measure requires roadways be designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips with calming features such as marked crosswalks, curb extensions, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts or mini-circles, on-street parking, planter strips with trees, chicanes/chokers and others (CAPCOA 2010).

- **SDT-5: Incorporate Bike Lane Street Design (on-site)**
  - It is recommended that the Project implement of bicycle facilities within and adjacent to the Project site. Within the Project it is recommended that Class I Bikeways be constructed along the following;
    - South side of Street 'S' between Lemoore Avenue and the eastern boundary of the Project.
    - Street 'G' between Street 'S' and Street 'P'.
  - Also, within the Project it is recommended that Class II Bikeways be constructed along the following:
    - Street 'S' between Lemoore Avenue and the eastern boundary of the Project
    - Mary Drive between Street 'I' and Lacey Boulevard.
    - Project frontages along Lemoore Avenue between Lacey Boulevard and Glendale Avenue.
    - Lacey Boulevard between Lemoore Avenue the eastern boundary of the Project.
  - The effectiveness of this measure will depend largely on its implementation as a stand-alone strategy or in combination with multiple design elements to strengthen street network characteristics and enhance multi-modal environments (CAPCOA 2010).

- **SDT-7: Provide Bike Parking with Multi-Unit Residential Projects**
  - It is recommended that the Project implement a minimum of 14 bike parking spaces within the multi-family residential component.
  - The effectiveness of this measure will depend largely on its implementation as a stand-alone strategy or in combination with multiple design elements to strengthen street network characteristics and enhance multi-modal environments (CAPCOA 2010).

- **SDT-9: Dedicate Land for Bike Trails**
  - It is recommended that Class I Bikeways be constructed along the south side of Street 'S' between Lemoore Avenue and the eastern boundary of the Project and along Street 'G' between Street 'S' and Street 'P'.
  - The effectiveness of this measure will depend largely on its implementation as a stand-alone strategy or in combination with multiple design elements to strengthen street network characteristics and enhance multi-modal environments (CAPCOA 2010).

### Effectiveness of VMT Mitigation Measures

Table 3.14-6 identifies and summarizes the recommended VMT mitigation measures appropriate for residential land uses, the recommended VMT reduction rates per the *Quantifying Greenhouse Gas Mitigation Measures* published by CAPCOA. These measures are reflected in mitigation measures TRA-4, TRA-5, and TRA-6.

**Table 3.14-6**
**Summary of Required VMT Mitigation Measures**

| VMT Category | *Transportation Categories* | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| VMT Sub-Categories | Land-Use/Location | | | Neighborhood / Site Enhancement | | | | |
| VMT Measures | LUT-4: Increase Destination Accessibility | LUT-8: Locate Project near Bike Path/Bike Lane | LUT-9: Improve Design of Development | SDT-1: Provide Pedestrian Network Improvements | SDT-2: Provide Traffic Calming Measures | SDT-5: Incorporate Bike Lane Street Design (on-site) | SDT-7: Provide Bike Parking with Multi-Unit Residential Projects | SDT-9: Dedicate Land for Bike Trails |
| VMT Measure Reduction Rate[1] (%) | 6.67 | N/A | 7.33 | 2.00 | 0.5 | N/A | N/A | N/A |
| Max. VMT Measure Reduction Rate[2] (%) | 20.00 | N/A | 21.30 | 2.00 | 1.00 | N/A | N/A | N/A |
| Category VMT Reduction Rate (%) | 13.51 | | | 2.49 | | | | |
| Max. Category VMT Reduction Rate[2] (%) | 5.00 | | | 5.00 | | | | |
| Transportation VMT Reduction Rate (%) | 7.37[3] | | | | | | | |
| Max. Transportation VMT Reduction Rate[2] (%) | 10.00 | | | | | | | |

Note: 1 = VMT Reduction Rate based on engineering judgement, data provided by the developer and CAPCOA *Quantifying Greenhouse Gas Mitigation Measures*
*2 = Maximum Reduction Rates are derived from CAPCOA Quantifying Greenhouse Gas Mitigation Measures*
*3 = Calculated using the Max. Category VMT Reduction Rate if the Category VMT Reduction Rate is greater than the Max. Category Reduction Rate*

As shown in Table 3.14-7, VMT mitigation measures and internal capture are projected to reduce the residential VMT per capita from 9.29 to 8.61. This reduction does not reduce the Project's VMTs to below the threshold of 8.16 VMT per capita.

**Table 3.14-7**
**VMT Results**

| Project Components | Kings CAG plus Project VMT Results[1] | Reduction in VMT from Mitigation[2] | VMT (With Mitigations) | City of Lemoore VMT Threshold | Significant VMT Impact? |
|---|---|---|---|---|---|
| Residential | 9.29 / capita | -0.68 / capita | 8.61 / capita | 8.16 / capita | Yes |

Note: 1 = VMT Results per Kings CAG model
2 = VMT Mitigation Measures from CAPCOA *Quantifying Greenhouse Gas Mitigation Measures*

Therefore, even after implementation of feasible VMT mitigation measures TRA-4 through TRA-6, which requires the construction of bike lanes and traffic calming features, the Project exceeds the threshold of 8.16 VMT per capita and is determined to be ***significant and unavoidable.***

**Mitigation Measures:**

**TRA-3** a) Prior to a Subdivision Notice of Completion, the Project shall construct Class I Bikeways along the following:

- South side of Street 'S' between Lemoore Avenue and the eastern boundary of the Project.
- Street 'G' between Street 'S' and Street 'P'. the Project shall install Class II Bikeways along Street 'S' between Lemoore Avenue and the eastern boundary of the Project and along Mary Drive between Street 'I' and Lacey Boulevard.

b) Adjacent to the Project, Class II Bikeways shall be constructed along the following:
  - The frontage along Lemoore Avenue between Lacey Boulevard and Glendale Avenue
  - The frontage along Lacey Boulevard between Lemoore Avenue the eastern boundary of the Project.

**TRA-4** Prior to a Subdivision Notice of Completion the Project shall incorporate:

a) Intersection traffic calming features such as mini-circles at the following intersections:
  - Beverly Drive and Street 'S',
  - Street 'G' and Street 'S',
  - Street 'L' and Street 'S',

- Street 'C' and Street 'I',
- Street 'D' and Street 'I',
- Mary Drive and Street 'I',
- Street 'A' and Street 'F'.

b) Street traffic calming features including on street parking throughout the Project (excluding Street 'S') at the following:
   - Between Lemoore Avenue and the eastern boundary of the Project,
   - Along Mary Drive between Lacey Boulevard and Street 'J',
   - Along median islands on Street 'S' between Lemoore Avenue and Street 'D'
   - Along Mary Drive between Lacey Boulevard and Street 'I',
   - Planter strips with street trees throughout the Project.

**TRA-5** Prior to issuance of an Occupancy permit for the multi-family residential component, the Project shall implement a minimum of 14 bike parking spaces.

**Impact 3.14-3:** *Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?*

**Less Than Significant Impact.** As noted in Impact 3.14-1, access to and from the Project site will be from eight main access points. All proposed internal roadways will be constructed to meet local and State standards and requirements. No sharp roadway curves currently exist in the proposed Project area, nor would such curves be created by the proposed Project. No roadway design features associated with this proposed Project would result in an increase in hazards due to a design feature or be an incompatible use. The internal road system has been designed with traffic calming features such as curved roadways, mini-circles at some intersections and relatively short blocks of housing. There are no non-residential uses (such as farm equipment) associated with the Project. Any impacts would be ***less than significant.***

**Mitigation Measures**

None are required.

**Impact 3.14-4:** *Result in inadequate emergency access?*

**Less Than Significant Impact With Mitigation.** Preparation of a detailed Traffic Management Plan (TMP) as required by TRA-2, would be required prior to construction of the proposed Project. The TMP would delineate all road closures provisions to maintain access to adjacent residential properties at all times, prior notices, adequate sign-postings, detours, provisions for pedestrian and bicycle transportation and permitted hours of construction activity. Proper detours and warning signs would be established along the project perimeter to ensure public safety. The TMP shall be devised so that construction would not interfere with emergency response or evacuation plans. With implementation of the TMP and mitigation measures, less than significant impacts are anticipated. Therefore, no significant impacts to vehicular and emergency access would occur during construction activities.

Once constructed the proposed Project includes multiple access roads allowing adequate egress and ingress to the residential development in the event of an emergency. Additionally, as part of the proposed Project, internal access roadways would be constructed to City standards. The City has reviewed the site layout and determined that the Project provides adequate emergency access. Therefore, after mitigation, there is a ***less than significant impact.***

**Mitigation Measures:**

Implementation of Mitigation Measure TRA-2.

**Cumulative Impacts**

The potential for cumulative transportation impacts exists where there are multiple projects proposed in an area that have overlapping operational phases that could affect similar resources. Projects with overlapping schedules for operations could result in a substantial contribution to increased traffic levels throughout the surrounding roadway network. Cumulative impacts from the project, when considered with nearby, reasonably foreseeable planned projects, would occur once the Project was constructed have been determined for each impact area below.

**Impact 3.14-1: Less Than Cumulatively Considerable With Mitigation.** As discussed previously, the study intersection of Liberty Drive and Hanford-Armona Road is projected to operate at an unacceptable LOS during both peak periods under cumulative (Year 2042). To improve the LOS at this intersection, it is recommended that the following improvement be implemented.

- Liberty Drive / Hanford-Armona Road

- Signalize the intersection with protected left-turn phasing in all directions while retaining the existing lane geometrics.

Mitigation measure TRA-1 will require the developer to pay a per rata share for the improvement needed at the intersection of Liberty Drive and Hanford-Armona Road. With implementation of TRA-1, the level of service and traffic flow in the Project area will remain acceptable. Mitigation measure TRA-2 requires the developer to develop a Construction Traffic Management Plan and to obtain encroachment permits for road work. Therefore, impacts would be ***less than cumulatively considerable***.

**Impact 3.14-2: Cumulatively Considerable With Mitigation.** Construction of the individual development projects allowed under the land use designations of the City General Plan may result in the generation of traffic increases and may contribute incrementally to Citywide VMTs. While all feasible and reasonable mitigation has been imposed on the Project, VMTs remains above the City's threshold and therefore is a cumulatively considerable impact. Mitigation measures TRA – 3 through TRA – 5 will require the developer to install bicycle lanes, bicycle parking, and traffic calming features. VMT mitigation measures and internal capture are projected to reduce the residential VMT per capita from 9.29 to 8.61. This reduction does not reduce the Project's VMTs to below the threshold of 8.16 VMT per capita. Therefore, after mitigation, this impact is ***cumulatively considerable***.

**Impact 3.14-3: Less Than Cumulatively Considerable With Mitigation.** TRA -2 will require the developer to develop a Construction Traffic Management Plan and to obtain encroachment permits for road work. As such, impacts associated with this topic are ***less than cumulatively considerable with mitigation.***

**Impact 3.14-4: Less Than Cumulatively Considerable.** As discussed previously, once constructed, the proposed Project includes multiple access roads allowing adequate egress and ingress to the residential development in the event of an emergency. Additionally, as part of the proposed Project, internal access roadways would be constructed to City standards. The City has reviewed the site layout and determined that the Project provides adequate emergency access. In addition, a Traffic Management Plan will be devised so that construction would not interfere with emergency response or evacuation plans. Therefore, impacts associated with this topic are ***less than cumulatively considerable.***

# 3.15 Tribal Cultural Resources

This section of the DEIR evaluates the potential impacts to Tribal Cultural Resources (TCRs) associated with Project implementation. A Cultural Resources Survey was prepared for the Project (see Appendix C). In addition, the City of Lemoore notified applicable Tribes to request consultation on the Project.

## Environmental Setting

Environmental Background

The study area is located at an elevation of 230 feet above mean sea level on the open flats of the San Joaquin Valley north of the City of Lemoore, Kings County, California. Currently this region can be characterized as a dry open valley bottom now utilized for suburban or agricultural uses. The study area is north of the former shoreline of Tulare Lake, at roughly 200 feet above mean sea level. Prior to reclamation and channelization, the region would have been a low-lying, water-rich area characterized by streams, sloughs, marshes, and swamps. Occasionally inundated by floodwaters, in many years portions of this region would have been swampy during the winter rainy season and marsh land during other parts of the year. Historical and recent land-use has changed the vegetation that was once present within and near the Project area. The immediate Project location historically most likely fell within the Valley Grassland community, however, with Riparian Woodlands present along streams and freshwater marshes common in the area.[1]

Ethnographic Background

Penutian-speaking Yokuts tribal groups occupied the southern San Joaquin Valley region and much of the nearby Sierra Nevada. Ethnographic information about the Yokuts was collected primarily by Powers (Appendix C). For a variety of historical reasons, existing research information emphasizes the central Yokuts tribes who occupied both the valley and particularly the foothills of the Sierra. The northernmost tribes suffered from the influx of Euro-Americans during the Gold Rush and their populations were in substantial decline by the time ethnographic studies began in the early twentieth century. In contrast, the southernmost tribes were partially removed by the Spanish to missions and eventually absorbed into multi-tribal communities on the Sebastian Indian Reservation (on Tejon Ranch), and later the Tule River Reservation and Santa Rosa Rancheria to the north. The result is an unfortunate scarcity of ethnographic detail on

[1] Phase I Survey, Lacey Ranch Project, Lemoore, Kings County, California. Prepared by ASM Affiliates, Inc. May 2021. Appendix C. Page 5.

southern Valley tribes, especially in relation to the rich information collected from the central foothills tribes where native speakers of the Yokuts dialects are still found. Regardless, the general details of indigenous life-ways were similar across the broad expanse of Yokuts territory, particularly in terms of environmentally influenced subsistence and adaptation and with regard to religion and belief, which were similar everywhere.

This scarcity of specific detail is particularly apparent in terms of southern valley tribal group distribution. Latta places the north shore of Tulare Lake east of Fish Slough in Nutúnutu territory, with the closest village being Wiu nearer the Mussel Slough inlet. Kroeber however, indicates that Nutúnutu territory did not include the north shore of Tulare Lake, but that the north shore, including Fish Slough, was Tachi territory. The village of Wiu remains near the inlet of Cottonwood Creek and Mussel Slough.

The Yokuts settlement pattern was largely consistent, regardless of specific tribe involved. Winter villages were typically located along lakeshores and major stream courses (as these existed circa AD 1800), with dispersal phase family camps located at elevated spots on the valley floor and near gathering areas in the foothills.

Most Yokuts groups, again regardless of specific tribal affiliation, were organized as a recognized and distinct tribelet; a circumstance that almost certainly pertained to the tribal groups noted above. Tribelets were land-owning groups organized around a central village and linked by shared territory and descent from a common ancestor. The population of most tribelets ranged from about 150 to 500 peoples.

Each tribelet was headed by a chief who was assisted by a variety of assistants, the most important of whom was the winatum, a herald or messenger and assistant chief. A shaman also served as religious officer. While shamans did not have any direct political authority, they maintained substantial influence within their tribelet (Appendix C).

Shamanism is a religious system common to most Native American tribes. It involves a direct and personal relationship between the individual and the supernatural world enacted by entering a trance or hallucinatory state (usually based on the ingestion of psychotropic plants, such as jimsonweed or more typically native tobacco). Shamans were considered individuals with an unusual degree of supernatural power, serving as healers or curers, diviners, and controllers of natural phenomena (such as rain or thunder). Shamans also produced the rock art of this region, depicting the visions they experienced in vision quests believed to represent their spirit helpers and events in the supernatural realm (Appendix C).

The centrality of shamanism to the religious and spiritual life of the Yokuts was demonstrated by the role of shamans in the yearly ceremonial round. The ritual round, performed the same each year, started in the spring with the jimsonweed ceremony, followed by rattlesnake dance and (where appropriate) first salmon ceremony. After returning from seed camps, fall rituals began in the late summer with the mourning ceremony, followed by first seed and acorn rites and then bear dance. In each case, shamans served as ceremonial officials responsible for specific dances involving a display of their supernatural powers.

Subsistence practices varied from tribelet to tribelet based on the environment of residence. Throughout Native California, and Yokuts territory in general, the acorn was a primary dietary component, along with a variety of gathered seeds. Valley tribes augmented this resource with lacustrine and riverine foods, especially fish and wildfowl. As with many Native California tribes, the settlement and subsistence rounds included the winter aggregation into a few large villages, where stored resources (like acorns) served as staples, followed by dispersal into smaller camps, often occupied by extended families, where seasonally available resources would be gathered and consumed.

Although population estimates vary and population size was greatly affected by the introduction of Euro-American diseases and social disruption, the Yokuts were one of the largest, most successful groups in Native California. Cook estimates that the Yokuts region contained 27 percent of the aboriginal population in the state at the time of contact; other estimates are even higher. Many Yokuts people continue to reside in the southern San Joaquin Valley today, including at the nearby Santa Rosa Rancheria.[2]

## Regulatory Setting

### State of California Regulations

*Assembly Bill (AB) 52*

AB 52, which was approved in September 2014 and became effective on July 1, 2015, requires that CEQA lead agencies consult with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of a proposed project, if requested by the tribe. A provision of the bill, chaptered in CEQA Section 21086.21, also specifies that a project with an

[2] Phase I Survey, Lacey Ranch Project, Lemoore, Kings County, California. Prepared by ASM Affiliates, Inc. May 2021. Appendix C. Pages 5-7.

effect that may cause a substantial adverse change in the significance of a TCR is a project that may have a significant effect on the environment.

Defined in Section 21074(a) of the Public Resources Code, TCRs are:

1. Sites, features, places, cultural landscapes, sacred places and objects with cultural value to a California Native American tribe that are either of the following:
    a. Included or determined to be eligible for inclusion in the California Register of Historical Resources; or
    b. Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.
2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

TCRs are further defined under Section 21074 as follows:

a. A cultural landscape that meets the criteria of subdivision (a) is a TCR to the extent that the landscape is geographically defined in terms of the size and scope of the landscape; and
b. A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "non-unique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a TCR if it conforms with the criteria of subdivision (a).

Mitigation measures for TCRs must be developed in consultation with the affected California Native American tribe pursuant to newly chaptered Section 21080.3.2, or according to Section 21084.3. Section 21084.3 identifies mitigation measures that include avoidance and preservation of TCRs and treating TRCs with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource.

According to AB 52, it is the responsibility of the tribes to formally request of a lead agency that they be notified of projects in the lead agency's jurisdiction so that they may request consultation

related to TCRs. The City of Lemoore conducted their required tribal outreach related to the proposed Project in 2020.

*Native American Heritage Commission*

PRC Section 5097.91 established the NAHC, the duties of which include inventorying places of religious or social significance to Native Americans and identifying known graves and cemeteries of Native Americans on private lands. Section 5097.98 of the PRC specifies a protocol to be followed when the NAHC receives notification of a discovery of Native American human remains from a county coroner

*Senate Bill 18*

SB 18 (Statutes of 2004, Chapter 905), which went into effect January 1, 2005, requires local governments (city and county) to consult with Native American tribes before making certain planning decisions and to provide notice to tribes at certain key points in the planning process. The intent is to "provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting, or mitigating impacts to, cultural places" (Governor's Office of Planning and Research, 2005).

The purpose of involving tribes at these early planning stages is to allow consideration of cultural places in the context of broad local land use policy, before individual site-specific, project-level, land use designations are made by a local government. The consultation requirements of SB 18 apply to general plan or specific plan processes proposed on or after March 1, 2005.

According to the Tribal Consultation Guidelines: Supplement to General Plan Guidelines (Governor's Office of Planning and Research, 2005), the following are the contact and notification responsibilities of local governments:

- Prior to the adoption or any amendment of a general plan or specific plan, a local government must notify the appropriate tribes (on the contact list maintained by the NAHC) of the opportunity to conduct consultations for the purpose of preserving, or mitigating impacts to, cultural places located on land within the local government's jurisdiction that is affected by the proposed plan adoption or amendment. Tribes have 90 days from the date on which they receive notification to request consultation, unless a shorter timeframe has been agreed to by the tribe (Government Code Section 65352.3).
- Prior to the adoption or substantial amendment of a general plan or specific plan, a local government must refer the proposed action to those tribes that are on the NAHC

contact list and have traditional lands located within the city or county's jurisdiction. The referral must allow a 45-day comment period (Government Code Section 65352). Notice must be sent regardless of whether prior consultation has taken place. Such notice does not initiate a new consultation process.

- Local government must send a notice of a public hearing, at least 10 days prior to the hearing, to tribes who have filed a written request for such notice (Government Code Section 65092).

## Thresholds of Significance

The thresholds of significance for this section are established by the CEQA Checklist Item.

- Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

    i. Listed or eligible for listing in the California Register of Historical Resources, or in the local register of historical resources as defined in Public Resources Code Section 5020.1j(k) or

    ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria det forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

As described in detail above, to evaluate the project's potential effects on tribal cultural resources a SLF search was conducted by the NAHC,  and SB 18 and AB 52 notification letters were sent to Native American groups and individuals indicated by the NAHC to solicit information regarding the presence of tribal cultural resources. Impacts to tribal cultural resources may include direct impacts resulting from ground-disturbing activities or indirect visual impacts associated with the construction of above ground structures within the view shed of an identified tribal cultural resource.

## Impacts and Mitigation Measures

**Impact 3.15-1:** *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:*

*i)* *Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or*

*ii)* *A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.*

**Less Than Significant with Mitigation.** As previously discussed, the City of Lemoore conducted their required tribal outreach related to the proposed Project in March of 2020. According to AB 52, the tribes had 90 days from the receipt of the letter to request consultation with the City of Lemoore. Of the tribes that were notified, the City received one response from the Santa Rosa Rancheria Tachi Yokut Tribe, who requested that a Tribal representative be retained to provide a cultural presentation to all construction staff and the landowner within 20 days prior to the start of initial ground-breaking.

As previously discussed in Chapter 3.4 – Cultural Resources, the subject site is not known to contain any tribal cultural resources (TCRs). As further noted in that chapter, with respect to archaeological resources and human remains that may be present in areas where there would be some ground disturbance, mitigation measures set forth in the section would be implemented to ensure that should resources be encountered, they would be protected from damage. Therefore, while no TCRs are expected to be affected by the proposed Project, the mitigation measures set forth in Chapter 3.4 - Cultural Resources as well as within this section, would further ensure that any resources encountered would not be adversely affected.

Although construction and operation would occur on previously disturbed land, unknown historical resources may be discovered during ground-disturbing activities. In order to account for unanticipated discoveries and the potential to impact previously undocumented or unknown resources, the following mitigation measures are recommended. With the implementation of

Mitigation Measures TRI-1 through TRI-4, impacts under this criterion would be less than significant with mitigation.

Based on the above, the proposed Project is not expected to result in a substantial adverse change in the significance of TCRs, and this impact is considered ***less than significant with mitigation.***

**Mitigation Measures**

**TRI-1:** Prior to any ground disturbance, a surface inspection of the site shall be conducted by a Tribal Monitor. The Tribal Cultural Staff shall monitor the site during grading activities. The Tribal Staff shall provide pre-project-related activities briefings to supervisory personnel and any excavation contractor, which will include information on potential cultural material finds, and any excavation contractor, which will include information on potential cultural material finds, and on the procedures, to be enacted if resources are found. Prior to any ground disturbance, the applicant shall offer the Santa Rosa Rancheria Tachi Yokut Tribe the opportunity to provide a Native American Monitor during ground-disturbing activities. Tribal participation would be dependent upon the availability and interest of the tribe.

**TRI-2:** In the event that historical or archaeological cultural resources are discovered during project-related activities or decommissioning, operations shall stop within 100 feet of the find, and a qualified archeologist shall determine whether the resource requires further study. The qualifies archaeologist shall determine the measures that shall be implemented to protect the discovered resources including, but not limited to, excavation of the finds and evaluation of he finds and evaluation of the finds in accordance with § 15064.5 of the CEQA Guidelines. Measures may include avoidance, preservation in-place, recordation, additional archaeological resting, and data recovery, among other options. Any previously undiscovered resources found during project-related activities within the project area shall be recorded on appropriate Department of Parks and Recreation forms and evaluated for significance. No further ground disturbance shall occur in the immediate vicinity of the discovery until approved by the qualified archaeologist.

The Lead Agency, along with other relevant or tribal officials, shall be contacted upon the discovery of cultural resources to begin coordination on the disposition

of the find(s). Treatment of any significant cultural resources shall be undertaken with the approval of the Lead Agency.

**TRI-3:** Upon coordination with the Lead Agency, any archaeological artifacts recovered shall be donated to an appropriate tribal custodian or a qualified scientific institution where they would be afforded applicable cultural resources laws and guidelines.

**TRI-4**: If human remains are discovered during project-related activities or operational activities, further excavation or disturbance shall be prohibited pursuant to Section 7050.5 of the California Health and Safety Code. The specific protocol, guidelines, and channels of communication outlined by the Native American Heritage Commission, in accordance with Section 7050.5 of the Health and Safety Code, Section 5097.98 of the Public Resources Code (Chapter 1492, Statutes of 1982, Senate Bill 297), and Senate Bill 447 (Chapter 44, Statutes of 1987) shall be followed. Section 7050.5(c) shall guide the potential Native American involvement, in the event of discovery of human remains, at the direction of the County Coroner.

## Cumulative Impacts

**Less Than Cumulatively Considerable**. The scope for considering cumulative impacts to tribal cultural resources are the geographic areas in Kings County as well as the areas designated by the Native American Heritage Commission as having potential to impact TCRs as a result of the Project. As discussed above, the proposed Project area is not known to contain any TRCs; however, mitigation is included to reduce any potential impacts to Tribal Resources. With implementation of Mitigation Measures TRI-1 through TRI-4, cumulative impacts are considered ***less than cumulatively considerable***.

# 3.16 Utilities and Service Systems

This section of the DEIR identifies potential impacts of the proposed Project pertaining to water supply and infrastructure, wastewater service, solid waste and other utility services. To assist in evaluation of this environmental impact, a Water Supply Analysis (Appendix G) was prepared.

## Environmental Setting

*Project Site*

As described in Section 2.1, the Project site is located immediately north of the City of Lemoore in Kings County, in an area dominated by rural agricultural land and homesteads to the north, east and west, and residential development associated with the City of Lemoore immediately to the south. The site is partially designated by the City of Lemoore General Plan for future residential uses and is currently zoned as Limited Agricultural-10 District (AL-10) by Kings County. Approximately one-third of the site (the southern one-third) is within the City's Sphere of Influence (SOI) while the remaining two-thirds are currently outside the SOI. The entire site is within the adopted Urban Development Boundary and is proposed for annexation into the City limits of Lemoore.

Project site topography is relatively flat, varying in elevation from 212 to 230 feet above mean sea level, with the lowest elevation occurring along the northern boundary of the site and the highest elevation occurring along the most southeastern portion. The Project site is underlain by a mix of Nord complex and Whitewolf coarse sandy loam (Colibri, 2020). As of Summer 2021, the land is being farmed for alfalfa and utilizes on-site agricultural wells for irrigation.

The site has been used to grow alfalfa for at least the last five years. Of the 155-acre site, approximately 154 acres are used for growing with approximately 1 acre used for dirt access roads. Alfalfa requires at least 4 acre-feet per year per acre in the San Joaquin Valley of California.[1] Based on 154 acres of alfalfa production, the site uses approximately 616 acre-feet (AF) of water per year (154 acres X 4 AFY = 616 AFY). If the proposed Project is approved and annexed into the City, the Project will tie into the City's existing water system. The Project will also require connection to the City's wastewater treatment (sewer) system and will require other utilities such as electrical and solid waste. Each utility is discussed individually herein.

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[1] https://alfalfa.ucdavis.edu/irrigatedalfalfa/pdfs/ucalfalfa8287prodsystems_free.pdf, page 12 (accessed Oct. 2021).

*Local Groundwater Basin*

The groundwater subbasin underlying the City of Lemoore is the Tulare Lake Subbasin (Groundwater Basin No. 5-022.12). The Tulare Lake Subbasin is one of eight subbasins within the Tulare Lake Hydrologic Region that transport, filter, and store water. The major rivers in the Subbasin that provide most of the surface water runoff for the Region is the Kings River. The Tulare Lake Subbasin is a non-adjudicated basin, meaning there are no restrictions on groundwater pumping.

Of the 5.1 million acres of the San Joaquin Valley Basin, the Tulare Lake Subbasin has a surface area of approximately 524 thousand acres (818 square miles). The Tulare Lake Subbasin is bounded on the south by the Kings-Kern county line, on the west by the California Aqueduct, the eastern boundary of Westside Groundwater Subbasin, and Tertiary marine sediments of the Kettleman Hills. It is bounded on the north by the southern boundary of the Kings Groundwater Subbasin, and on the east by the westerly boundaries of the Kaweah and Tule Groundwater Subbasins. The southern half of the Tulare Lake Subbasin consists of lands in the former Tulare Lake bed in Kings County. The San Joaquin River Groundwater Basin is not an adjudicated groundwater basin.[2]

The Tulare Lake Subbasin Groundwater Sustainability Plan (Groundwater Sustainability Plan) (January 2020) provided historical information related to groundwater in the Subbasin. The Subbasin groundwater model and Department of Water Resources (DWR) estimates were used to calculate groundwater in storage for the principal aquifers within the Subbasin boundaries based on 2016 conditions. The unconfined aquifer has an average specific yield of 8.5% and an average saturated thickness of 451 feet over the 535,869 acres of the Subbasin. This yields an estimated 20.5 million AF of groundwater in storage in the unconfined aquifer. The confined aquifer has an estimated average specific yield of 4.91% and an average saturated thickness of 2,294 feet over the 535,869 acres of the Subbasin. This yields an estimated 60.4 million AF of groundwater in storage in the confined aquifer zone. Total estimated groundwater in storage as of 2016 is approximately 80.9 million AF, which is slightly less than the DWR estimate of 82.5 million AF.[3]

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[2] City of Lemoore 2015 UWMP, page 33.

[3] Tulare Lake Subbasin Groundwater Sustainability Plan (Jan. 2020), page 3-30.

According to the Groundwater Sustainability Plan, the estimated groundwater in storage in the Subbasin above the base of fresh groundwater is roughly 82.5 million AF while groundwater use in the Subbasin is in overdraft by an average of roughly 0.07 million AF/Y. Although the reductions in groundwater storage will be addressed through the Groundwater Sustainability Plan implementation period, the long-term regional overdraft could continue for many years without significant risk to the beneficial uses and users of groundwater in the Subbasin.[4]

The Groundwater Sustainability Plan also indicated that for the areas covered by the South Fork Kings Groundwater Sustainability Agency (includes the City of Lemoore), the average annual storage change for this area is estimated at a negative 37,840 AF.

*Existing Water Infrastructure*

The City provides water distribution to approximately 26,000 residents, industrial and commercial users. The water distribution system consists of approximately 115 miles of active water pipelines, ranging from 1 to 18 inches, 10 active wells, 5 storage tanks and 4 pump stations.[5]

The City's existing groundwater wells and capacity are summarized as follows:[6]

| Well Name | Current Status | Well Capacity (GPM) |
|---|---|---|
| Well 2 | Inactive | -- |
| Well 3 | Abandoned | -- |
| Well 4 | Active | 1,850 |
| Well 5 | Active | 1,850 |
| Well 6 | Active | 1,100 |
| Well 7 | Active | 1,200 |
| Well 8 | Abandoned | -- |
| Well 9 | Emergency | 1,200 |
| Well 10 | Seasonal | 2,000 |
| Well 11 | Active | 800 |
| Well 12 | Backup | 1,150 |
| Well 13 | Active | 1,000 |
| Well 14 | Active | 1,000 |
| | **Total:** | **13,150** |

[4] Tulare Lake Subbasin Groundwater Sustainability Plan (Jan. 2020), page 4-13.

[5] City of Lemoore – Water Master Plan (Feb. 2020), page 1-1.

[6] Ibid, page 3-1.

Based on the capacity of the existing wells, the City is capable of producing of up to 6,912 million gallons (MG) per year (13,150 GPM @ 24 hours/day X 365 days per year = 6,912 MG).

*Existing Wastewater Infrastructure*

The City of Lemoore owns and operates a wastewater treatment facility (WWTF) located at 1145 Vine Street, Lemoore, California. The WWTF is equipped with an influent pump station, Old Headworks, New Headworks, four lagoon ponds, choline gas injection, and an effluent pump station. Raw wastewater from the collection system is pumped to the Old Headworks structure where it then flows by gravity to the New Headworks. The City provides wastewater services to approximately 26,000 residents, industrial and commercial users. The wastewater system includes approximately 82 miles of active gravity sewer lines, ranging from 6 to 21 inches in diameter, 17 lift stations and associated force mains. [7]

*Solid Waste*

Solid waste disposal for Lemoore is managed by Kings Waste and Recycling Authority (KWRA). The City's PWD Refuse Division is responsible for solid waste collection services. The majority of the City's solid waste is taken to Kettleman Hills Landfill Facility, a Class II/III facility owned by Chemical Waste Management (CWMI).[8]

*Electrical and Natural Gas*

Electricity

Electricity, a consumptive utility, is a man-made resource. The production of electricity requires the consumption or conversion of energy resources, including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources, into energy. The delivery of electricity involves a number of system components, including substations and transformers that lower transmission line power (voltage) to a level appropriate for on-site distribution and use. The electricity generated is distributed through a network of transmission and distribution lines commonly called a power grid. Conveyance of electricity through transmission lines is typically responsive to market demands. Electricity is provided to the Project area by PG&E.

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[7] Lemoore Wastewater Treatment and Collection System Master Plan (2020), page ES-6.

[8] Lemoore General Plan EIR, page 6-11.

*Energy Usage*

Energy usage is typically quantified using the British Thermal Unit (BTU). Total energy consumption in California was 7,967 trillion BTU's in 2018 (the most recent year for which this specific data is available), which equates to an average of 202 million BTU's per capita.[9] Of California's total energy usage, the breakdown by sector is 40 percent transportation, 23 percent industrial, 19 percent commercial, and 18 percent residential.[10] Electricity and natural gas in California are generally consumed by stationary users such as residences and commercial and industrial facilities, whereas petroleum consumption is generally accounted for by transportation-related energy use.

While BTUs measure total energy usage, electricity is generally measured in kilowatt-hours (kWh) which is the standard billing unit for energy delivered to consumers by electrical utilities.

The electricity consumption attributable to Kings County from 2009 to 2019 is shown in Table 3.16-1. As indicated, energy consumption in Kings County varied approximately 22 percent over the last 10 years.

**Table 3.16-1**
**Electricity Consumption in Kings County 2009 – 2019**[11]

| Year | Electricity Consumption (in millions of kilowatt hours) |
|---|---|
| 2009 | 1,585 |
| 2010 | 1,452 |
| 2011 | 1,423 |
| 2012 | 1,680 |
| 2013 | 1,785 |
| 2014 | 1,817 |
| 2015 | 1,774 |

[9] U.S. Energy Information Administration, California State Profile and Energy Estimates. https://www.eia.gov/state/print.php?sid=CA. Accessed February 2021.
[10] Ibid.

[11] California Energy Commission. Energy Reports. Electricity Consumption by County. https://ecdms.energy.ca.gov/elecbycounty.aspx. Accessed February 2021.

| | |
|---|---|
| 2016 | 1,779 |
| 2017 | 1,498 |
| 2018 | 1,758 |
| 2019 | 1,583 |

Natural Gas

Natural gas is a combustible mixture of simple hydrocarbon compounds (primarily methane) that is used as a fuel source. Natural gas consumed in California is obtained from naturally occurring reservoirs, mainly located outside the State, and delivered through high-pressure transmission pipelines. The natural gas transportation system is a nationwide network, and, therefore, resource availability is typically not an issue. Natural gas provides almost one-third of the state's total energy requirements and is used in electricity generation, space heating, cooking, water heating, industrial processes, and as a transportation fuel.

Natural gas is provided to the Project area by Southern California Gas. The natural gas consumption attributable to Kings County from 2009 to 2019 is provided in Table 3.16-2, Natural Gas Consumption in Kings County 2009-2019. Natural gas consumption in Kings County varied 9% over the 10-year span.

**Table 3.16-2**
**Natural Gas Consumption in Kings County 2009 – 2019[12]**

| Year | Natural Gas Consumption (in millions of therms) |
|---|---|
| 2009 | 68 |
| 2010 | 69 |
| 2011 | 71 |
| 2012 | 68 |
| 2013 | 70 |

[12] California Energy Commission. Energy Reports. Gas Consumption by County. http://www.ecdms.energy.ca.gov/gasbycounty.aspx Accessed February 2021.

| | |
|---|---|
| 2014 | 66 |
| 2015 | 67 |
| 2016 | 67 |
| 2017 | 64 |
| 2018 | 70 |
| 2019 | 69 |

## Regulatory Setting

Federal Agencies and Regulations

*Clean Water Act (CWA)*

The Clean Water Act (CWA) is intended to restore and maintain the chemical, physical, and biological integrity of the nation's waters (33 CFR 1251). The regulations implementing the CWA protect waters of the U.S. including streams and wetlands (33 CFR 328.3). The CWA requires states to set standards to protect, maintain, and restore water quality by regulating point source and some non-point source discharges. Under Section 402 of the CWA, the National Pollutant Discharge Elimination System (NPDES) permit process was established to regulate these discharges.

*Safe Drinking Water Act*

The Safe Drinking Water Act (SDWA) was established to protect the quality of drinking water in the United States. This SDWA focuses on all waters either designed or potentially designed for drinking water use, whether from surface water or groundwater sources. The SDWA and subsequent amendments authorized the EPA to establish health-based standards, or maximum contaminant levels (MCLs), for drinking water to protect public health against both natural and anthropogenic contaminants. All owners or operators of public water systems are required to comply with these primary (health-related) standards. State governments, which can be approved to implement these primary standards for the EPA, also encourage attainment of secondary (nuisance-related) standards. At the federal level, the EPA administers the SDWA and establishes MCLs for bacteriological, organic, inorganic, and radiological constituents (United States Code Title 42, and Code of Federal Regulations Title 40). At the State level, California has adopted its own SDWA, which incorporates the federal SDWA standards with some other requirements specific only to California (California Health and Safety Code, Section 116350 et seq.).

The 1996 Federal SDWA amendments established source water assessment programs pertaining to untreated water from rivers, lakes, streams, and groundwater aquifers used for drinking water supply. According to these amendments, the EPA must consider a detailed risk and cost assessment, as well as best available peer-reviewed science, when developing standards for drinking water. These programs are the foundation of protecting drinking water resources from contamination and avoiding costly treatment to remove pollutants. In California, the Drinking Water Source Assessment and Protection (DWSAP) Program fulfills these federal mandates. The California State Water Resources Control Board: Division of Drinking Water (SWRCB-DDW) is the primary agency for developing and implementing the DWSAP Program and is responsible for performing the assessments of existing groundwater sources.

*Federal Emergency Management Agency (FEMA)*

The National Flood Insurance Act (1968) makes available federally subsidized flood insurance to owners of flood-prone properties. To facilitate identifying areas with flood potential, Federal Emergency Management Agency (FEMA) has developed Flood Insurance Rate Maps (FIRM) that can be used for planning purposes.

*Central Valley Project Improvement Act*

The Reclamation Projects Authorization and Adjustment Act of 1992 (Public Law 102-575) includes Title 34, the Central Valley Project Improvement Act (CVPIA). The CVPIA amended the previous authorizations of the California CVP to include fish and wildlife protection, restoration, and mitigation as project purposes having equal priority with irrigation and domestic uses and fish and wildlife enhancement as a project purpose equal to power generation. The CVPIA identifies specific measures to meet the CVPIA's multiple purposes.

State of California Regulations

*California Green Building Standards Code*

Construction- and demolition-generated (C&D) waste is heavy, inert material. This material creates significant problems when disposed of in landfills. Since C&D debris is heavier than paper and plastic, it is more difficult for counties and cities to reduce the tonnage of disposed waste. For this reason, C&D waste debris has been specifically targeted by the State of California for diversion from the waste stream.

The California Green Building Standards Code (Standards Code) will apply to the construction related activities of this Project. The purpose of the Standards Code is to improve public health, safety, and general welfare by enhancing the design and construction of buildings using building concepts that

have a positive environmental impact and encouraging sustainable construction practices. Provisions of the Standards Code shall apply to the design and construction of building structures subject to State regulation.

*California Department of Resources Recycling and Recovery (CalRecycle)*

CalRecycle is the State agency designated to oversee, manage, and track California's 76 million tons of waste generated each year. It is one of the six agencies under the umbrella of the California Environmental Protection Agency. CalRecycle develops regulations to control and manage waste, for which enforcement authority is typically delegated to the local government. The Board works jointly with local government to implement regulations and fund programs.

*Assembly Bill 939 and Senate Bill 1016*

The California Integrated Waste Management Act of 1989, or Assembly Bill (AB) 939, established the Integrated Waste Management Board, required the implementation of integrated waste management plans, and mandated that local jurisdictions divert at least 50 percent of all solid waste generated (from 1990 levels), beginning January 1, 2000, and divert at least 75 percent by 2010. Projects that would have an adverse effect on waste diversion goals are required to include waste diversion mitigation measures to assist in reducing these impacts to less-than-significant levels. With the passage of Senate Bill (SB) 1016 (the Per Capita Disposal Measurement System) in 2006, only per capita disposal rates are measured to determine if a jurisdiction's efforts are meeting the intent of AB 939.

*State Water Resources Control Board*

The State Water Resources Control Board (SWRCB), located in Sacramento, is the agency with jurisdiction over water quality issues in the State of California. The SWRCB is governed by the Porter-Cologne Water Quality Act (Division 7 of the California Water Code), which establishes the legal framework for water quality control activities by the SWRCB. The intent of the Porter-Cologne Act is to regulate activities which may adversely affect the quality of waters of the State to attain the highest water quality which is reasonable, considering a full range of demands and values. The act authorizes the SWRCB to establish water quality principles and guidelines for long-range resource planning including groundwater and surface water management programs and control and use of recycled water. Much of the implementation of the SWRCB's responsibilities is delegated to nine Regional Water Quality Control Boards (RWQCBs). The proposed Project site is located within the jurisdiction of the Central Valley RWQCB.

*California Water Code (CWA)*

The Federal CWA establishes certain guidelines for the states to follow in developing programs for the control of surface water pollution and for planning the development and use of water resources. Under certain circumstances, the CWA allows the federal Environmental Protection Agency (EPA) to withdraw the primary responsibility for these programs from states with inadequate implementation mechanisms.

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Division 7 of the California Water Code) (Porter-Cologne Act). The Porter-Cologne Act grants the SWRCB and each of the RWQCBs power to protect water quality, and is the primary vehicle for implementation of California's responsibilities under the Federal CWA. The Porter-Cologne Act grants the SWRCB and the RWQCBs authority and responsibility to adopt plans and policies, to regulate discharges to surface and groundwater, to regulate waste disposal sites and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, or oil or petroleum product.

Each RWQCB must formulate and adopt a water quality control plan (Basin Plan) for its region. The regional plans must conform with the policies set forth in the Porter-Cologne Act and established by the State water policy adopted by the SWRCB. The Porter-Cologne Act also provides that a RWQCB may include within its regional plan water discharge prohibitions applicable to particular conditions, areas, or types of waste.

Water Code Section 13260 requires all dischargers of waste that may affect water quality in waters of the state to prepare and provide a water quality discharge report to the RWQCB. Section 13260a-c is as follows:

(a) Each of the following persons shall file with the appropriate regional board a report of the discharge, containing the information that may be required by the regional board:

(1) A person discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the state, other than into a community sewer system.

(2) A person who is a citizen, domiciliary, or political agency or entity of this state discharging waste, or proposing to discharge waste, outside the

boundaries of the state in a manner that could affect the quality of the waters of the state within any region.

(3) A person operating, or proposing to construct, an injection well.

(b) No report of waste discharge need be filed pursuant to subdivision (a) if the requirement is waived pursuant to Section 13269.

(c) Each person subject to subdivision (a) shall file with the appropriate regional board a report of waste discharge relative to any material change or proposed change in the character, location, or volume of the discharge.

*Water Code section 10910 (SB 610)*

Water Code section 10910 (SB 610) requires that a lead agency obtain a water supply assessment from an applicable public water system for certain projects subject to the California Environmental Quality Act, which are defined as (a) a residential development of more than 500 dwelling units; (b) a shopping center or business employing more than 1,000 persons or having more than 500,000 square feet of floor space; (c) a commercial office building employing more than 1,000 persons or having more than 250,000 square feet; (d) a hotel or motel with more than 500 rooms; (e) an industrial or manufacturing establishment housing more than 1,000 persons or having more than 650,000 square feet or 40 acres; (f) a mixed use project containing any of the foregoing; or (g) any other project that would have a water demand at least equal to a 500 dwelling unit project. Refer to Impact Section 3.9-2 herein for the discussion pertaining to the Water Supply Assessment that was prepared for the Project.

*Regional Water Quality Board*

The Central Valley RWQCB administers the NPDES storm water-permitting program in the Central Valley region, including Lemoore. Construction activities on one acre or more are subject to the permitting requirements of the NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (General Construction Permit). The General Construction Permit requires the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The plan must include specifications for Best Management Practices (BMPs) that will be implemented during proposed construction to control degradation of surface water by preventing the potential erosion of sediments or discharge of pollutants from the construction area. The General Construction Permit program was established by the SWRCB and the Central Valley RWQCB for the specific purpose of reducing impacts to surface waters that may occur due to construction activities. BMPs have been established in the California Storm

Water Best Management Practice Handbook (2003), and are recognized as effectively reducing degradation of surface waters to an acceptable level. Additionally, the SWPPP describes measures to prevent or control runoff degradation after construction is complete, and identifies a plan to inspect and maintain these facilities or project elements.

*Waste Discharge Requirements*

The Central Valley RWQCB typically requires a Waste Discharge Requirements (WDR) permit for any facility or person discharging or proposing to discharge waste that could affect the quality of the waters of the state, other than into a community sewer system. Those discharging pollutants (or proposing to discharge pollutants) into surface waters must obtain an NPDES permit from the Central Valley RWQCB.

The NPDES serves as the WDR. For other types of discharges, such as those affecting groundwater or in a diffused manner (e.g., erosion from soil disturbance or waste discharges to land), a Report of Waste Discharge must be filed with the Central Valley RWQCB in order to obtain a WDR. For specific situations, the Central Valley RWQCB may waive the requirement to obtain a WDR for discharges to land or may determine that a proposed discharge can be permitted more effectively through enrollment in a general NPDES permit or general WDR.

*Porter-Cologne Water Quality Control Act*

Under the Porter-Cologne Water Quality Control Act, waters of the state fall under the jurisdiction of the appropriate Regional Water Quality and Control Board (RWQCB). Under the act, the RWQCB must prepare and periodically update water quality control basin plans. Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control nonpoint and point sources of pollution to achieve and maintain these standards. Projects that affect wetlands or waters must meet waste discharge requirements of the RWQCB, which may be issued in addition to a water quality certification or waiver under CWA Section 401.

*Assembly Bill 1881*

AB 1881 expanded previous legislation related to landscape water use efficiency. AB 1881, the Water Conservation in Landscaping Act of 2006, enacted landscape efficiency recommendations of the California Urban Water Conservation Council (CUWCC) for improving the efficiency of water use in new and existing urban irrigated landscapes in California. AB 1881 required the DWR to update the existing Model Local Water Efficient Landscape Ordinance and local agencies to adopt the updated model ordinance or an equivalent. The law also requires the California Energy Commission to adopt

performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

*Assembly Bill 2882*

AB was passed in 2008 and encourages public water agencies throughout California to adopt conservation rate structures that reward consumers who conserve water. AB 2882 clarifies the allocation-based rate structures and establishes standards that protect consumers by ensuring a lower base rate for those who conserve water.

*Sustainable Groundwater Management Act*

In 2014, California enacted the Sustainable Groundwater Management Act (SGMA) (Water Code §10720 et seq.). SGMA requires that groundwater basins designated by the state Department of Water Resources (DWR) as high priority and/or critically overdrafted must be managed under a Groundwater Sustainability Plan (GSP) that avoids "undesirable results" as defined in the Act within 20 years from January 31, 2020. The GSP must be developed by a Groundwater Sustainability Agency (GSA) approved by the DWR. The WWD service area boundary largely overlaps with DWR-designated San Joaquin Valley groundwater subbasin 5.22-9, which is commonly called the "Westside Subbasin." The DWR has designated the Westside Subbasin as high priority and critically overdrafted, and SGMA requires that a GSP be adopted by an approved GSA for the subbasin by January 31, 2020. The City of Lemoore is part of the South Fork Kings Groundwater Sustainability Agency.

*Senate Bills 610 (Chapter 643, Statutes of 2001) and 221 (Chapter 642, Statues of 2001)*

SB 610 and SB 221 are companion measures that seek to promote more collaborative planning among local water suppliers and cities and counties. They require that water supply assessments occur early in the land use planning process for all large-scale development projects. If groundwater is the supply source, the required assessments must include detailed analyses of historic, current, and projected groundwater pumping and an evaluation of the sufficiency of the groundwater basin to sustain a new project's demands. They also require an identification of existing water entitlements, rights, and contracts and a quantification of the prior year's water deliveries. In addition, the supply and demand analysis must address water supplies during single and multiple dry years presented in five-year increments for a 20-year projection. Under SB 221, approval by a county of a subdivision of more than 500 homes requires an affirmative written verification of a sufficient water supply.

*California Drought Regulations*

Beginning in January 2014, Governor Jerry Brown issued three Executive Orders (EOs), B-26-14, B-28-14, and B-29-15, regarding water supply, water demand, and water use within the State during severe drought conditions. EO B-29-15, issued April 1, 2015, sets limitations not only for existing land uses and water supply systems, but also for new construction. Some of these restrictions include:

- The Water Board shall prohibit irrigation with potable water of ornamental turf on public street medians.
- The Water Board shall prohibit irrigation with potable water outside of newly constructed homes and buildings that is not delivered by drip or microspray systems.
- The California Energy Commission shall adopt emergency regulations establishing standards that improve the efficiency of water appliances, including toilets, urinals, and faucets available for sale and installation in new and existing buildings.

In addition, EO B-29-15 requires that DWR update the State Model Water Efficient Landscape Ordinance through expedited regulation by the end of 2015. This ordinance will increase water efficiency standards for new and existing landscapes through more efficient irrigation systems, greywater usage, onsite storm water capture, and by limiting the portion of landscapes that can be covered in turf (EO B-29-15, Increase Enforcement Against Water Waste, Action #11, 2015).

On November 13, 2015, Governor Brown issued EO B-36-15, which upheld the previous EOs, and directs the SWRCB to extend of urban water use restrictions through October 31, 2016 based on drought conditions known through January 2016. The SWRCB issued emergency regulations on February 2, 2016, in compliance with EO B-36-15. These emergency regulations maintain the current tiers of required water reductions; however, additional adjustments in response to stakeholders; equity concerns were included in the emergency regulations.

*Resource Conservation and Recovery Act*

The Resource Conservation and Recovery Act (RCRA) was enacted in 1976 to address the huge volumes of municipal and industrial solid waste generated nationwide. After several amendments, the Act as it stands today governs the management of solid and hazardous waste and underground storage tanks (USTs). RCRA is an amendment to the Solid Waste Disposal Act of 1965. RCRA has been amended several times, most significantly by the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA is a combination of the first solid waste statutes and all subsequent amendments. RCRA authorizes the EPA to regulate waste management activities. RCRA authorizes states to develop and enforce their own waste management programs, in lieu

of the federal program, if a state's waste management program is substantially equivalent to, consistent with, and no less stringent than the federal program.

*California Integrated Waste Management Act*

To minimize the amount of solid waste that must be disposed of by transformation and land disposal, the State Legislature passed the California Integrated Waste Management Act of 1989 (AB 939), effective January 1990. According to AB 939, all cities and counties are required to divert 25 percent of all solid waste from landfill facilities by January 1, 1995, and 50 percent by January 1, 2000, and beyond. Solid waste plans are required to explain how each city's AB 939 plan will be integrated with the respective county plan. They must promote (in order of priority) source reduction, recycling and composting, and environmentally safe transformation and land disposal.

<u>Local Regulations</u>

*City of Lemoore 2030 General Plan*

The following lists policies and implementing actions from the City of Lemoore General Plan pertaining to hydrology and water quality that are applicable to the proposed Project.

**GUIDING POLICIES**

PU-G-1 Maintain and enhance water resources to ensure that Lemoore has an adequate, affordable, water supply to sustain the City's quality of life and support existing and future development—without jeopardizing water supply for future generations.

PU-G-2 Conserve water through supply-side efficiencies and water conservation programs.

**IMPLEMENTING ACTIONS**

**Water Supply Management**

PU-I-1 Update the City's Urban Water Management Plan every five years and ensure its contents are consistent with the California Water Code and General Plan policies, including prioritization and identification of funding sources.

PU-I-2 Provide and maintain a system of water supply distribution facilities capable of meeting existing and future daily and peak demands, including fire flow requirements, in a timely and cost effective manner.

PU-I-3 Monitor the demands on the water system and, as necessary, manage development to mitigate impacts and/or facilitate improvements to the water supply and distribution systems.

PU-I-4 Continue to support the Laguna Irrigation District's ground water recharging (water banking) efforts, in consultation with the State Department of Water Resources and county water management authorities.

**Land Use/New Development**

PU-I-5 Require that necessary water supply infrastructure and storage facilities are in place concurrently with new development, and approve development plans only when a dependable and adequate water supply for the development is assured.

PU-I-6 Require water meters in all new development.

PU-I-7 Require all major new development projects with more than 200,000 square feet of floor area overall to have a water management plan, in accordance with State law:

- Large projects will be required to submit planting plans, irrigation plans, schedules, and water use estimates for City approval prior to issuance of building permits;
- Industrial projects will be required to submit water recycling plans and irrigation plans for proposed landscaping.

PU-I-8 Require water bubblers for street trees, separate from surface irrigation used for turf.

PU-I-9 Promote the use of evapotranspiration (ET) water systems in irrigating large parks and large landscaped areas.

ET water systems are "smart water systems" that can be programmed with data such as the type of soil, slope of landscape, type of vegetation, and daily weather conditions, so that they can automatically adjust irrigation schedules based on those conditions. The result is lower water bills and a healthier environment.

PU-I-10 Require that developers of agricultural land to be annexed to the City offer the water rights associated with this land to the City.

**New Water Sources**

PU-I-11 Revise regulations to allow the safe use of reclaimed water ("gray water") by homes and businesses where feasible. Examples of areas where "gray water" might be safely used include:

- Irrigation of parks and residential yards, and irrigation for farming;
- Cooling towers and HVAC systems in commercial or industrial buildings; and
- Water cisterns in flush toilets.

PU-I-12 Establish and implement a program of cooperative surface water use with local water purveyors and irrigation districts to retain surface water rights and supply following annexation and urban development so as to protect against aquifer overdrafts and water quality degradation.

PU-I-13 Promote the continued use of surface water for agriculture to reduce groundwater table reductions.

PU-I-14 Drill additional wells within the City when other water supply alternatives are not feasible, and demand warrants their development.

**GUIDING POLICY**

PU-G-3 Ensure that adequate wastewater collection, treatment, and disposal facilities are provided in a timely fashion to serve existing and future needs of the City.

**IMPLEMENTING ACTIONS**

PU-I-15 Maintain existing levels of wastewater service by expanding treatment plant and disposal facilities as required by growth and by the Regional Water Quality Control Board.

PU-I-16 Update the Wastewater Master Plan by 2010 and construct planned facilities to serve development under this General Plan.

PU-I-17 Establish impact fees and sewer rates adequate to finance required wastewater treatment and disposal facilities upgrades or replacements.

LU-I-7 Create, maintain, or upgrade Lemoore's public and private infrastructure to support future land use and planned development under the General Plan.

LU-I-8 Require new development to pay its fair share of the costs of public infrastructure, services and transportation facilities, in accordance with State law.

## Thresholds of Significance

The thresholds of significance for this section are established by the CEQA Checklist Item.

- o Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?
- o Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?
- o Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?
- o Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?
- o Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

## Impacts and Mitigation Measures

**Impact 3.16-1:** *Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?*

**Less Than Significant Impact With Mitigation.** Implementation of the proposed Project would include up to 825 residential units on the site. The Project will require that utilities be extended to serve the proposed development, including water, wastewater, stormwater, electric power, natural gas and telecommunications facilities.

*Wastewater / Sewer*

As noted in Section 3.9 Hydrology and Water Quality, once annexed into the City, the Project site would be located within the service area of the City of Lemoore WWTF. Since the WWTF is considered a publicly owned treatment facility, operational discharge flows treated at the WWTF would be required to comply with applicable water discharge requirements issued by the Regional Water Quality Control Board (RWQCB). Compliance with conditions or permit requirements established by the City as well as water discharge requirements outlined by the RWQCB would ensure that wastewater discharges coming from the proposed Project site and treated by the WWTP system would not exceed applicable Central RWQCB wastewater treatment requirements. See also Response 3.16-3, below, which describes the Project's wastewater demands/characteristics and the City's capacity to handle those demands/characteristics.

*Stormwater*

As discussed in Section 3.9 - Hydrology and Water Quality, the proposed Project would result in new impervious areas associated with site improvements and would therefore require new storm water drainage facilities. The proposed Project would install storm water drainage facilities (e.g. storm drainage mechanisms, storm water pipes, and a detention basin) that would be in compliance with the City of Lemoore Development Standards.

*Water Supply*

As discussed in Section 3.9 - Hydrology and Water Quality, the Project will add demand for water to the City of Lemoore water system. The Project will require approximately 518 afy of water on an on-going basis and approximately 83 af of water during construction. Based on the Project's Water Supply Assessment (Appendix G), the City has sufficient water to serve the Project. However, the Project is subject to water use reduction methods and will be conditioned to offer existing water shares and to pay water service impact fees. After mitigation, impacts to water supply are determined to be less than significant at the project-level.

*Electricity and Natural Gas*

The Project will be required to access public utilities for electric power, natural gas and solid waste disposal. Based on the analysis herein, it is not anticipated that off-site improvements would be required for these facilities, but the Project proponent will be responsible for developing the necessary infrastructure to utilize these utilities. The Project would not result in the wasteful, inefficient, or unnecessary use of energy due to Project design features that will comply with the City's design guidelines and regulations that apply to the Project, such as Title 24 Building Energy

Efficiency Standards and the California Green Building Standards Code that apply to residential buildings. The installation of solar panels required by 2019 Title 24 standards is expected to offset most electricity used by Project residences.

With the adherence to the increasingly stringent building, as well as implementation of the Project's design features that would reduce energy consumption, the proposed Project would not contribute to a cumulative impact to the wasteful or inefficient use of energy. As such, the Project would not result in a significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation.

*Solid Waste*

The existing landfill (Kettleman Hills Landfill Facility) is permitted to receive a maximum of 2,000 TPD but typically receives an average of only about 1,350 TPD. The Project's contribution would be approximately 0.0035% of the daily maximum permitted capacity of 2,000 TPD and 0.005% of the average daily amount of 1,350 TPD. As such, there is adequate capacity to accommodate the solid waste demands of the proposed Project.

The proposed Project would be required to comply with applicable State and local regulations, including regulations pertaining to disposal of recyclable materials. With adequate landfill capacity at existing landfills and compliance with regulations, a less than significant impact would occur. Refer to Response 3.16-4 for more information pertaining to solid waste.

*Impact Determination*

Thus, with incorporation of mitigation measures, the proposed Project's impacts associated with acquisition of utilities would be less than significant.

**Mitigation Measures:**

Implement Mitigation Measures HYD-1, HYD-2, and UTIL-1.

**Impact 3.16-2:** *Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?*

**Less Than Significant With Mitigation.** The proposed Project would add demand for water to the City of Lemoore water system, which is reliant on groundwater to serve its customers. The information herein is based on the Water Supply Assessment that was prepared for the Project (Appendix G).

As discussed in Section 3.9 - Hydrology and Water Quality (and summarized herein), the Water Supply Assessment utilized information from the City's adopted 2015 Urban Water Management Plan (2015 UWMP), as well as from a more recent water use information from the City's Water Master Plan (2020 WMP) that was adopted by the City in August 2021 to determine Project water demands.

It is assumed the Project's park space acreage will have irrigated landscaping and will require approximately 3.5 acre-feet per year (afy), for a total of approximately 28 afy. The 825 residential dwellings at full buildout will use approximately 490 afy. Based on these assumptions, the Project would require approximately 518 afy (or approximately 169 MG) of water on an on-going basis. The Project will also require approximately 83 af of water during construction (not on-going).

The City can produce up to approximately 6,912 MG per year of potable water. The projected 2040 demand in the City is 4,830 MG, leaving a difference of 2,082 MG. At 169 MG, the Project would account for approximately 8.1% of the projected 2040 demand in the City. Since the City's 2015 UWMP has projected sufficient reasonably available volumes of water and because the Project is within the population growth assumptions (and associated water availability) identified in both the City's 2015 UWMP and 2020 WMP, there is sufficient water to serve the Project on an on-going basis.

The Project also has incorporated a number of design features that will reduce water consumption, including the use of low flow faucets, toilets and shower devices. The Project will also comply with MWELO regulations related to outdoor irrigation and Title 20 Water Efficiency Standards. These measures will help reduce Project-related demand for potable water. In addition, the City of Lemoore, as a member of the South Fork GSA, will work with the GSA to implement the projects and management actions identified by the GSA. Upon Project approval and annexation into the City of Lemoore, the Project will be subject to the requirements of the Sustainability Plan of the South Fork GSA.

The City's General Plan provides policies related to annexation of agricultural properties. Specifically, General Plan Policy PU-I-10 states the following: "Require that developers of agricultural land to be annexed to the City offer the water rights associated with this land to the City." The Project Applicant currently has 100 water shares (equivalent to 150 AFY) that are subject to this Policy. Mitigation Measure HYD – 1 requires evidence that the Fresno County Local Agency Formation Commission (LAFCo) has approved the annexation of the project site into the City's boundaries and requires that 100 water shares be offered to the City to comply with Policy PU-I-10. In addition, the Project will be required to pay impact fees associated with

connection to the City's water system. This requirement is identified in Mitigation Measure HYD – 2. With implementation of the mitigation measure, the impact is less than significant.

**Mitigation Measures:**

Implement Mitigation Measures MM HYD-1 and MM HYD-2.

**Impact 3.16-3:** *Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*

**Less Than Significant With Mitigation.** The City of Lemoore owns and operates a WWTF located at 1145 S. Vine Street, Lemoore, California. The WWTF is equipped with an influent pump station, Old Headworks, New Headworks, four lagoon ponds, choline gas injection, and an effluent pump station. Raw wastewater from the collection system is pumped to the old headworks structure where it then flows by gravity to the new headworks. The City provides wastewater services to approximately 26,000 residents, industrial and commercial users. The wastewater system includes approximately 82 miles of active gravity sewer lines, ranging from 6 to 21 inches in diameter, 17 lift stations and associated force mains. [13]

*Project Wastewater (Sewer) Demands*

The City prepared a Wastewater Treatment and Collection System Master Plan (Wastewater Master Plan) that analyzed existing and projected wastewater operations in the City through 2040. According to the Wastewater Master Plan, a per capita flow of 70 GPCD was used to estimate wastewater use in the City. The City's wastewater flow has ranged from a high of 75 gpcd in 2007 to 59 GPCD in 2013. The value of 70 GPCD was chosen because the 2013 value may be artificially low due to State mandated water conservation.[14]

As previously identified, the Project is proposing development of up to 825 residential units which would result in an increased population of 2,558 persons (based on 3.1 persons per dwelling unit). This would result in wastewater flows of 65,356,900 gallons of wastewater per year (70 GPCD X 2,558 persons = 179,060 gallons per day X 365 days per year = 65,356,900 GPCD).

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[13] Lemoore Wastewater Treatment and Collection System Master Plan (2020), page ES-6.

[14] Ibid, page 4-13.

*Wastewater Characteristics*

The City's WWTF treats municipal wastewater generated throughout the City to meet treatment standards and discharge requirements established by the RWQCB. These requirements are outlined in the City's Waste Discharge Requirements (WDR) order No. 96-050, which was last renewed in 1996. The wastewater routed to the WWTF includes all residential, commercial and industrial wastewater generated within the City limits, with the exception of the Leprino Foods The City's influent wastewater passes through a headworks structure with a mechanical bar screen to remove large debris then sent to ponds equipped with aerators, which promote biological oxidation and reduce organics. Additional ponds settle out solids before effluent is discharged. The plant has four ponds and the City's effluent is disinfected by chlorine gas injection. Effluent is piped west of the City and discharged into a canal owned by Westlake Farms.

The Project would generate wastewater with similar characteristics to discharge produced by other uses in the City, including similar in content to the residential land uses in the immediate area (typical residential wastewater from toilets, sinks, showers, etc.). There are no non-residential uses that would introduce atypical wastewater characteristics. Wastewater generated by the Project would be collected and treated at the City's WWTF. Because of the nature of the Project's wastewater, and the fact that the WWTF is currently in compliance with their Waste Discharge Requirements, the Project will not cause the City to exceed any wastewater treatment requirements from the RWQCB.

*Project Comparison to City-wide Future Estimated Wastewater Production*

The Wastewater Master Plan provided population projections (and associated wastewater capacity) through Year 2040. The Lacey Ranch Project was identified specifically in Figure 2.2 of the Wastewater Master Plan and was included in the Plan's future projections. The Wastewater Master Plan provided the following population projections:

| Year | Wastewater Master Plan Population Assumptions |
|---|---|
| 2020 | 27,089 |
| 2025 | 28,332 |
| 2030 | 29,633 |
| 2035 | 30,993 |
| 2040 | 32,416 |

As previously mentioned, the proposed Project would result in the development of up to 825 residential units. The City averages 3.1 persons per household, which could result in an increase of approximately 2,558 people at full Project buildout. Using the information from the

Wastewater Master Plan, the City's current population of 27,089 residents would be increased by approximately 9.5% to 29,647 from the Project alone. Table 3.16-3 shows the City's existing population (per the City's Wastewater Master Plan), the increase in population from the proposed Project, and the City's Wastewater Master Plan projected population in Year 2040. The last column shows the additional population that could be accommodated under the City's Wastewater Master Plan even with full buildout of the proposed Project.

**Table 3.16-3: Wastewater Master Plan Population Estimates**

| Year 2020 Population | Proposed Project Population | Existing Plus Project Population | Wastewater Master Plan Projected Population | Additional Population That Could Be Accommodated Under the Wastewater Master Plan Assuming Lacey Ranch Full Buildout |
|---|---|---|---|---|
| 27,089 | 2,558 | 29,647 | 32,416 | 2,769 |

The City's Wastewater Master Plan anticipated a population of up to 32,416 people by 2040. Given the City's current population as identified in the Wastewater Master Plan (27,089 persons), the City could accommodate the proposed Project plus an additional 2,769 persons according to the underlying assumptions of the City's Wastewater Master Plan. Based on this information, it is reasonable to assume that the Project is within the population growth projections (and associated wastewater capacity availability) identified in the City's Wastewater Master Plan.

The City has identified improvements within the Wastewater Master Plan to remedy existing and future (anticipated) deficiencies in the wastewater system. These improvements are identified as follows[15]:

<u>Existing Capacity Improvements:</u>

- Three gravity main projects with a total length of 1.5 miles is recommended to mitigate capacity deficiencies.
- Five lift station capacity projects are recommended.

[15] Lemoore Wastewater Treatment and Collection System Master Plan (2020), page ES-19.

- Two force main capacity projects are recommended.

Future Capacity Improvements:

- Seven gravity main projects with a total length of 1.9 miles is recommended to mitigate 2040 capacity deficiencies.
- Nine gravity main projects with a total of 2.7 miles is recommended to mitigate buildout deficiencies.
- Two lift station capacity projects is recommended to mitigate 2040 deficiencies.
- One life station capacity deficiency has been identified to mitigate buildout deficiencies.
- Two force main capacity projects are identified to mitigate buildout deficiencies.

New Service Related Improvements:

- Preliminary analysis recommends 13 projects at approximately 9 miles of sewer trunk alignment to serve future growth.
- Preliminary analysis recommends 9 lift stations to serve future growth.

Although the City's WWTF has adequate capacity to serve the Project, these recommended improvements to the City's existing wastewater system will be required in order to maintain adequate wastewater disposal services. The Project would be required to pay wastewater (sewer) impact fees prior to the issuance of a building permit, thereby mitigating the costs associated with acceptance of the Project wastewater (Mitigation Measure UTIL-1), and ensuring the impact remains less than significant.

**Mitigation Measures:**

**UTIL-1:** Prior to issuance of building permits, the Project proponent shall pay impact fees for its fair share of wastewater (sewer) services. The fee, or equivalent in-lieu, will be determined by the City of Lemoore. Evidence of the payment of impact fees shall be submitted to the City Community Development Department.

**Impact 3.16-4:** *Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?*

**Less Than Significant.** Solid waste disposal for Lemoore is managed by Kings Waste and Recycling Authority (KWRA). The City's Public Works Department Refuse Division is responsible for solid waste collection services. The majority of the City's solid waste is taken to Kettleman Hills Landfill Facility, a Class II/III facility owned by Chemical Waste Management (CWM).[16] Kettleman Hills has two state-of-the-art landfills designed for household and commercial trash (municipal solid waste). One of these units has been partially converted to a next generation landfill (otherwise known as a bioreactor landfill), which means that liquids are added to speed up the decomposition of waste. The landfill gas that is generated as a byproduct is captured and destroyed. The other landfill takes in household trash primarily from Kings, Tulare and Fresno Counties. The facility is permitted to receive a maximum of 2,000 tons of MSW per day (TPD), but typically receives an average of only about 1,350 TPD.[17]

*Project Construction*

Construction of the proposed Project would generate solid waste in the form of construction debris that would need to be disposed of at the Kettleman Hills Landfill Facility. Construction debris includes concrete, asphalt, wood, drywall, metals, and other miscellaneous and composite materials. Much of this material would be recycled and salvaged to the maximum extent feasible. Materials not recycled would be disposed of at local landfills. The Project site is currently undeveloped and would not require any demolition.

Site preparation (vegetation removal and grading activities) and construction activities would generate construction debris, including wood, paper, glass, plastic, metals, cardboard, and green wastes. Most of the solid waste generated by the construction phase of the proposed Project would be recycled in accordance with AB 939. Construction activities could also generate hazardous waste products. The wastes generated would result in an incremental and intermittent increase in solid waste disposal at the Kettleman Hills Landfill. However, with compliance with federal, State, and local statutes or regulations, a less than significant impact would occur.

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[16] Lemoore General Plan EIR, page 6-11.

[17] https://kettlemanhillslandfill.wm.com/fact-sheets/2011/facility-overview.jsp (accessed Nov. 2021).

*Project Operation*

The proposed Project would construct up to 825 residential dwellings. According to the Kings County Solid Waste Division, solid waste within their jurisdiction was estimated at 1,994 pounds per capita per year.[18] Based on that figure, the Project would produce approximately 5,100,652 pounds of solid waste per year (1,994 pounds X 2,558 persons = 5,100,652 pounds). This equates to approximately 13,974 pounds per day (5,100,652 pounds / 365 days = 13,974 pounds) or approximately 7 tons per day (TPD). As previously described, the existing landfill is permitted to receive a maximum of 2,000 TPD but typically receives an average of only about 1,350 TPD. The Project's contribution would be approximately 0.0035% of the daily maximum permitted capacity of 2,000 TPD and 0.005% of the average daily amount of 1,350 TPD. As such, there is adequate capacity to accommodate the solid waste demands of the proposed Project.

The proposed Project would be required to comply with applicable State and local regulations, including regulations pertaining to disposal of recyclable materials. With adequate landfill capacity at existing landfills and compliance with regulations, a less than significant impact would occur.

**Mitigation Measures:** None are required.

**Impact 3.16-5:** *Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?*

**Less Than Significant.** See Response to Impact 3.16-4. The 1989 California Integrated Waste Management Act (AB 939) requires Kings County to attain specific waste diversion goals. In addition, the California Solid Waste Reuse and Recycling Access Act of 1991, as amended, requires expanded or new development projects to incorporate storage areas for recycling bins into the project design. The proposed Project would be required to comply with all federal, State, and local statutes and regulations related to the handling and disposal of solid waste and impacts would be less than significant.

**Mitigation Measures:** None are required.

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[18] https://kingcounty.gov/depts/executive/performance-strategy-budget/regional-planning/benchmark-program/Environment/EN20_Waste.aspx (accessed Nov. 2021).

### Cumulative Impacts

*Electrical and Natural Gas*

**Less Than Cumulatively Considerable.** Development associated with buildout of the proposed Project would require the consumption of electricity and natural gas resources to accommodate the growth. As discussed above, new development and land use turnover would be required to comply with Statewide mandatory energy requirements outlined in Title 24, Part 6, of the California Code of Regulations (the CALGreen Code), which could decrease estimated electricity and natural gas consumption in new and retrofitted structures. In addition, cumulative projects would be required to meet or exceed the Title 24 building standards, as applicable, further reducing the inefficient use of energy. Future development would also be required to meet even more stringent requirements, including the objectives set forth in the AB 32 Scoping Plan, which seek to make all newly constructed residential homes produce a sustainable amount of renewable energy through the use of on-site photovoltaic solar systems. Furthermore, energy consumed by development in the Project area would continue to be subject to the regulations described in the Regulatory Setting of this Section. For these reasons, the electrical and natural gas energy that would be consumed by the Project is not considered unnecessary, inefficient, or wasteful. Impacts are less than cumulatively considerable.

*Water Supply*

**Cumulatively Significant and Unavoidable Even With Implementation of Mitigation.** As noted in Section 3.9 Hydrology and Water Quality, the geographic area for cumulative hydrology (water supply) analysis is the land area included in the Tulare Lake Sub Basin. Buildout of the City's General Plan and other pending projects in the Basin area will contribute to an increase in groundwater demand. Mitigation Measure HYD – 1 requires annexation of the Project site into the City's boundaries and requires that 100 water shares be offered to the City to comply with Poly PU-I-10. HYD-2 requires the payment of water service impact fees to reduce Project impacts to the City's water system. However, despite the implementation of mitigation, the proposed Project's water use, in combination with other cumulative scenario projects requiring water from the Tulare Lake Subbasin (Groundwater Basin No. 5-022.12) during the same time frame, would result in significant and unavoidable impacts to groundwater supplies in the Basin.

*Wastewater*

**Less Than Cumulatively Significant With Mitigation.** The geographical area for considering cumulative impacts associated with wastewater (sewer) is the geographic area covered by the City's Wastewater Treatment and Collection System Master Plan. As with the proposed Project, for future projects, the City collects development impact fees to help cover the cost of wastewater (sewer), water, and solid waste infrastructure and facilities. In addition, revenue from sales tax from future projects assists in maintaining these services. The City evaluates impact fees from new development on a project-by-project basis. The Project would be required to pay sewer impact fees prior to the issuance of a building permit with implementation of Mitigation Measure UTIL-1. Other projects in the vicinity would be required to offset substantial increases in wastewater per City impact fees. Therefore, cumulative impacts related to wastewater would be less than significant.

*Solid Waste*

**Less Than Cumulatively Considerable.** The geographical area for considering cumulative impacts associated with solid waste is the geographic area covered by the Kettleman Hills Landfill Facility. The proposed Project would generate a minimal amount of waste during construction and is not expected to significantly impact Kings County landfills. However, generation of waste from cumulative projects, including other residential, commercial and industrial developments could result in a cumulative impact. As described herein, the Project's contribution would be approximately 0.0035% of the daily maximum permitted capacity of 2,000 TPD and 0.005% of the average daily amount of 1,350 TPD. As such, there is adequate capacity to accommodate the solid waste demands of the proposed Project in addition to the Facility's existing commitments.  The cumulative impacts are less than significant for solid waste.

# Chapter 4

# ALTERNATIVES

# PROJECT ALTERNATIVES

## 4.1 Introduction

CEQA Guidelines Section 15126.6 requires the consideration of a range of reasonable alternatives to the proposed project that could feasibly attain most of the objectives of the proposed project. The Guidelines further require that the discussion focus on alternatives capable of eliminating significant adverse impacts of the project or reducing them to a less-than significant level, even if the alternative would not fully attain the project objectives or would be more costly. According to CEQA Guidelines, the range of alternatives required in an EIR is governed by the "rule of reason" that requires an EIR to evaluate only those alternatives necessary to permit a reasoned choice. An EIR need not consider alternatives that have effects that cannot be reasonably ascertained and/or are remote and speculative.

The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed.

CEQA Guidelines §15126.6(e) identifies the requirements for the "No Project" alternative. The specific alternative of "no project" shall also be evaluated along with its impact. The purpose of describing and analyzing a no project alternative is to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. The no project alternative analysis is not the baseline for determining whether the proposed project's environmental impacts may be significant, unless it is identical to the existing environmental setting analysis which does establish that baseline (see Section 15125).

Alternative locations can also be evaluated if there are feasible locations available. Each alternative is evaluated against the Project objectives and criteria established by the Lead Agency.

The proposed Project has the potential to have significant adverse effects on:

- Agriculture - Loss of Farmland (project and cumulative level)
- Biological resources (cumulative level only)

- Hydrology – Water Supply (cumulative level only)
- Transportation -Vehicle Miles Traveled impacts (project and cumulative level)

Even with the mitigation measures described in Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, of this EIR, impacts in these issue areas would be significant and unavoidable. Therefore, per the State CEQA Guidelines, this section discusses alternatives that are capable of avoiding or substantially lessening effects on these resources. The significant and unavoidable impacts of the proposed project are discussed below.

## 4.2 Project Objectives

In accordance with CEQA Guidelines Section 15124(b), the following are the City of Lemoore's Project objectives:

- To provide a variety of housing opportunities with a range of densities, styles, sizes and values that will be designed to satisfy existing and future demand for quality housing in the area.
- To provide a sense of community and walkability within the development through the use of street patterns, parks/trails, landscaping and other project amenities.
- To provide a residential development that is compatible with surrounding land uses and is near major services.
- To provide a residential development that assists the City in meeting its General Plan and Housing Element requirements and objectives.

## 4.3 Alternatives Considered in this EIR

- No Project
- Alternate Location
- Reduced (50%) Project

## 4.4 Analysis Format

In accordance with CEQA Guidelines Section 15126.6(d), each alternative is evaluated in sufficient detail to determine whether the overall environmental impacts would be less, similar, or greater than the corresponding impacts of the project. Furthermore, each alternative is evaluated to determine whether the project objectives identified in Chapter 2 - Project Description, of this Draft EIR would be mostly attained by the alternative. The Project's impacts that form the basis of comparison in the alternatives analysis are those impacts which represent

a conservative assessment of project impacts. The evaluation of each of the alternatives follows the process described below:

a) The net environmental impacts of the alternative after implementation of reasonable mitigation measures are determined for each environmental issue area analyzed in this EIR.
b) Post-mitigation significant and less than significant environmental impacts of the alternative and the project are compared for each environmental issue area as follows:
    - Less: Where the impact of the alternative after feasible mitigation would be clearly less adverse than the impact of the project, the comparative impact is said to be "less."
    - Greater: Where the impact of the alternative after feasible mitigation would be clearly more adverse than the impact of the project, the comparative impact is said to be "greater."
    - Similar: Where the impacts of the alternative after feasible mitigation and the project would be roughly equivalent, the comparative impact is said to be "similar."
c) The comparative analysis of the impacts is followed by a general discussion of whether the underlying purpose for the project, as well as the project's basic objectives would be substantially attained by the alternative.

## Impact Analysis

**No Project Alternative**

CEQA Section 15126.6(e) requires the discussion of the No Project Alternative "to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project." The No Project scenario in this case consists of retaining the property in its original configuration, with no construction or operation of the proposed Lacey Ranch residential development. Under this alternative, the site remains in agricultural production and no new urban development would occur on the site.

*Description*

This alternative would avoid both the adverse and beneficial effects of the Project. This alternative would avoid ground disturbance and construction-related impacts associated with construction of the proposed Project. No new development would occur on the site. The No

Project Alternative would avoid the generation of any environmental impacts beyond existing conditions.

*Environmental Considerations*

Continuation of the site in agricultural production would result in all environmental impacts being less than the proposed Project. There would be no changes to any of the existing conditions and there would be no impact to each of the 20 CEQA Checklist evaluation topics. The No-Project Alternative by definition would not meet the objectives of the proposed Project that were outlined in Section 4.2, above. Impacts from the No Project Alternative, as compared to the Project, are summarized as follows:

- **Aesthetics** – With no development, the site would remain as farmland and no new impacts would occur. Therefore, impacts are less than the proposed Project.
- **Agriculture and Forestry Resources** - With no development, the site would remain as farmland and no new impacts would occur. Therefore, impacts are less than the proposed Project. This Alternative would also eliminate the significant and unavoidable impacts (project and cumulative) associated with this topic from the proposed Project.
- **Air Quality** - With no development, the site would remain as farmland and no new impacts would occur. Therefore, impacts are less than the proposed Project.
- **Biological Resources** - With no development, the site would remain as farmland and no new impacts would occur. Therefore, impacts are less than the proposed Project. This Alternative would also eliminate the significant and unavoidable impacts (cumulative only) associated with this topic from the proposed Project.
- **Cultural Resources** - With no development, the site would remain as farmland and no new impacts would occur. Therefore, impacts are less than the proposed Project.
- **Energy** - With no development, the site would remain as farmland and no new impacts would occur. Therefore, impacts are less than the proposed Project.
- **Geology/Soils** - With no development, the site would remain as farmland and no new impacts would occur. Therefore, impacts are less than the proposed Project.
- **Greenhouse Gas Emissions** - With no development, the site would remain as farmland and no new impacts would occur. Therefore, impacts are less than the proposed Project.
- **Hazards & Hazardous Materials** - With no development, the site would remain as farmland and no new impacts would occur. Therefore, impacts are less than the proposed Project.
- **Hydrology & Water Quality** - With no development, the site would remain as farmland and no new impacts would occur. Therefore, impacts are less than the proposed Project.

This Alternative would also eliminate the significant and unavoidable impacts (cumulative only) associated with this topic from the proposed Project.

- **Land Use / Planning** - With no development, the site would remain as farmland and no new impacts would occur. Therefore, impacts are less than the proposed Project.
- **Mineral Resources** - With no development, the site would remain as farmland and no new impacts would occur. Therefore, impacts are less than the proposed Project.
- **Noise** - With no development, the site would remain as farmland and no new impacts would occur. Therefore, impacts are less than the proposed Project.
- **Population & Housing** - With no development, the site would remain as farmland and no new impacts would occur. Therefore, impacts are less than the proposed Project.
- **Public Services** - With no development, the site would remain as farmland and no new impacts would occur. Therefore, impacts are less than the proposed Project.
- **Recreation** - With no development, the site would remain as farmland and no new impacts would occur. Therefore, impacts are less than the proposed Project.
- **Transportation** - With no development, the site would remain as farmland and no new impacts would occur. Therefore, impacts are less than the proposed Project. This Alternative would also eliminate the significant and unavoidable impacts (cumulative only) associated with this topic from the proposed Project.
- **Tribal Cultural Resources** - With no development, the site would remain as farmland and no new impacts would occur. Therefore, impacts are less than the proposed Project.
- **Utilities & Service Systems** - With no development, the site would remain as farmland and no new impacts would occur. Therefore, impacts are less than the proposed Project. This Alternative would also eliminate the significant and unavoidable impacts (cumulative only) associated with this topic from the proposed Project.
- **Wildfire** - With no development, the site would remain as farmland and no new impacts would occur. Therefore, impacts are less than the proposed Project.

Refer to Table 4-1 for a comparison of each environmental topic for the No Project Alternative versus the proposed Project.

### Alternate Locations Alternative

The environmental considerations associated with an alternative site would be highly dependent on several variables, including physical site conditions, surrounding land use, site access, and suitability of the local roadway network. Physical site conditions include land, air, water, minerals, flora, fauna, noise, or objectives of historic or aesthetic significance, and would affect

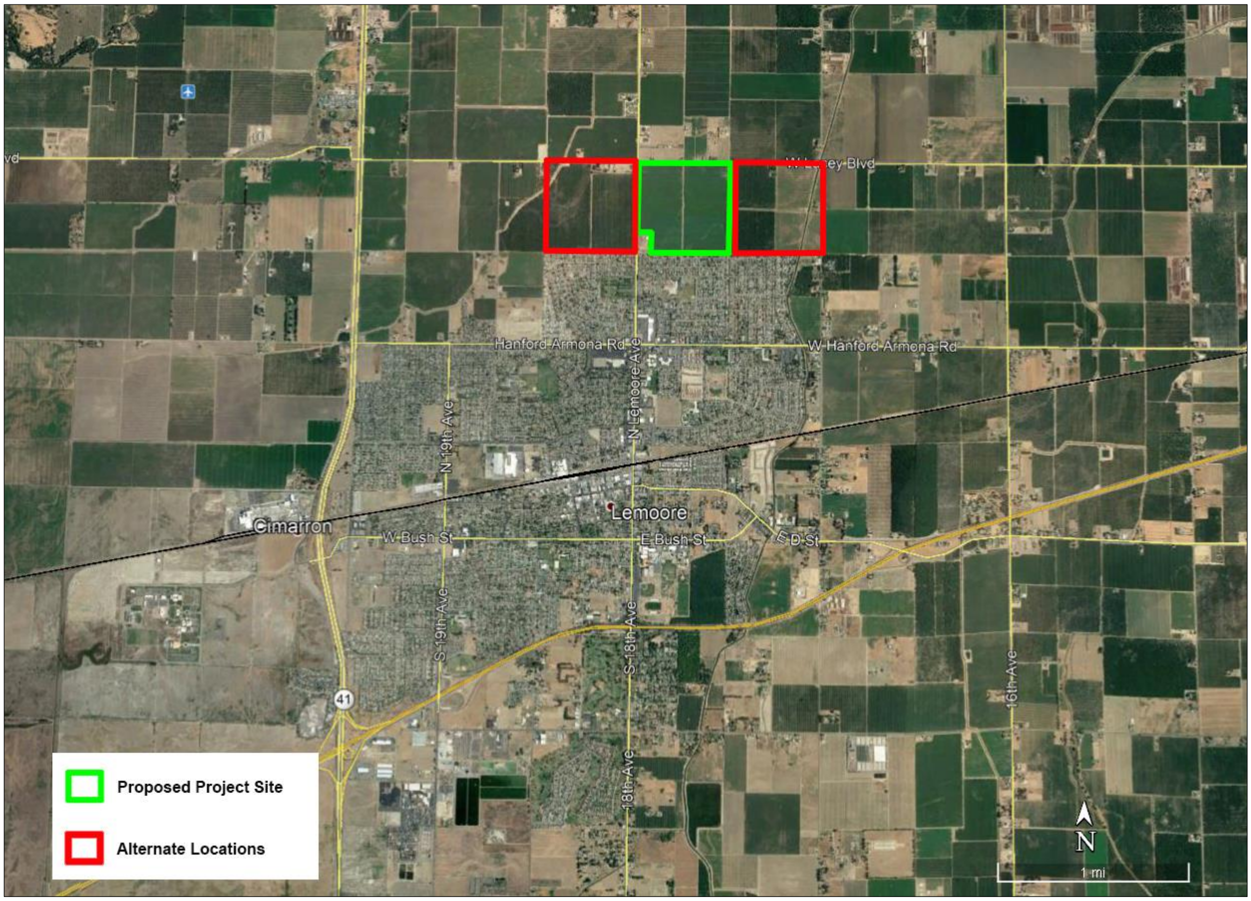
the nature and degree of direct impacts, needed environmental control systems, mitigation, and permitting requirements. Surrounding land use and the presence of sensitive receptors would influence neighborhood compatibility issues such as air pollutant emissions and health risk, odor, noise, and traffic. Site access and ability of the local roadway network to accommodate increased traffic without excessive and costly off site mitigation would be an important project feasibility issue.

The constraint on alternative site selection is the lessening or elimination of significant project impacts. The economic viability of the proposed project is dependent on ability to effectively develop a residential housing project in the Lemoore area. To maintain most of the project objectives, any potentially feasible alternative site needs to be of adequate size and in a location that is accessible and serviceable (utilities) by the City of Lemoore.

*Description*

There are relatively few sites within the City of Lemoore that provide adequately sized lands suitable for the proposed Project. The criteria for selection included whether or not the alternate site would substantially reduce environmental impacts, availability of land, adequately sized parcels, efficiency of access, and acceptable land use designations/zoning. There are areas of agricultural land of similar size located both east and west of the proposed Project. These areas could conceivably support the proposed Project and are depicted in the Figure A-1. The areas are outside the City limits but have similar zoning and land use designations as the proposed Project site. In addition, these areas would allow for contiguous growth adjacent to existing urban development in the City.

**Figure A-1**
**Alternate Locations**




Perhaps the greatest obstacle in selecting an alternative site for the proposed Project is that the Project Applicant does not already own land at these locations and/or does not have control of land at these locations However, for purposes of environmental evaluation, a description of potential environmental impacts is provided below.

*Environmental Considerations*

Development of an alternate site could theoretically meet most of the Project objectives presented earlier in this chapter. However, construction and operation of an alternate site would not be as cost effective or operationally efficient and thus is not consistent with the Project objectives. In addition, construction and operation at an alternate site would result in environmental impacts that are likely equal to or in some cases greater than the proposed project. The majority, if not all of project impacts are likely to occur at an alternate site.

Either of the alternative sites would require environmental review once the Applicant has prepared sufficient project description information. The time requirements for these activities

would reduce the ability of the Applicant to accommodate projected residential demand in a timely manner compared to the proposed Project. This alternative would be the most complex, costly, and time-consuming alternative to implement. Various engineering and technical studies would then be completed to define the project and its components. Environmental review and obtaining entitlements would follow prior to construction activities. The site identified herein appears to have conditions that are not as favorable as the proposed Project site, such as less acreage, and as mentioned earlier, lack of control over the land.

Impacts from the Alternate Locations Alternative, as compared to the Project, are summarized as follows:

- **Aesthetics** – With development of a similar project on an alternate site, aesthetic impacts would occur through the conversion of farmland to urban uses, introduction of light/glare, and construction of residential units on vacant land. Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project.
- **Agriculture and Forestry Resources** - With development of a similar project on an alternate site, agricultural impacts would occur through the conversion of farmland to urban uses. Therefore, impacts are similar to the proposed Project. This Alternative would not eliminate the significant and unavoidable impacts (project and cumulative) associated with this topic from the proposed Project.
- **Air Quality** - With development of a similar project on an alternate site, air quality impacts would occur from construction activities (construction vehicles and equipment, dust and other emissions) and from operational activities (vehicle trip emissions and other emissions from the development). Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project.
- **Biological Resources** - With development of a similar project on an alternate site, biological impacts could occur from development of a previously agricultural site to urban uses. Therefore, impacts are similar to the proposed Project.This Alternative would not eliminate the significant and unavoidable impacts (cumulative only) associated with this topic from the proposed Project.
- **Cultural Resources** - With development of a similar project on an alternate site, cultural resource impacts could occur from development of a previously agricultural site to urban uses. Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project.
- **Energy** - With development of a similar project on an alternate site, energy impacts would occur from construction activities (electricity, fuel) and operational activities (electricity,

natural gas, fuel). Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project.

- **Geology/Soils** - With development of a similar project on an alternate site, impacts to geology and soils would occur from construction activities (grading and land disturbing activities) and operational activities (the Alternative project would be subject to geotechnical evaluation). Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project.
- **Greenhouse Gas Emissions** - With development of a similar project on an alternate site, greenhouse gas emission impacts would occur from construction activities (construction equipment emissions and vehicle emissions) and operational activities (vehicle emissions). Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project.
- **Hazards & Hazardous Materials** - With development of a similar project on an alternate site, hazardous impacts would occur from construction activities (use and storage of hazardous substances) and operational activities (use and storage of hazardous substances). The Alternative site would also be a similar distance from the Lemoore Naval Air Station and would have similar impacts as the proposed Project. Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project.
- **Hydrology & Water Quality** - With development of a similar project on an alternate site, hydrology and water quality impacts would occur from construction activities (water for dust control, requirement for preparation of a SWPPP, drainage control) and operational activities (water demand associated with the development, drainage control). Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project. This Alternative would not eliminate the significant and unavoidable impacts (cumulative only) associated with this topic from the proposed Project.
- **Land Use / Planning** - With development of a similar project on an alternate site, land use and planning impacts would occur from development of existing agricultural lands to urban uses. The Alternative would not divide an established community. Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project.
- **Mineral Resources** - With development of a similar project on an alternate site, mineral resource impacts could occur from construction activities (grading and ground-disturbing activities) and operational activities (conversion of land to urban uses). Since this

Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project.

- **Noise** - With development of a similar project on an alternate site, noise impacts would occur from construction activities (construction equipment and vehicles) and operational activities (vehicles, air conditioners, televisions, radios, lawn mowers, etc.). The Alternative locations are similarly proximate to existing urban uses (as compared to the proposed Project). Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project.
- **Population & Housing** - With development of a similar project on an alternate site, population and housing impacts would occur from development of these sites. Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project.
- **Public Services** - With development of a similar project on an alternate site, public service impacts would occur from development of these sites (need for police, fire, schools and other public facilities). Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project.
- **Recreation** - With development of a similar project on an alternate site, recreation impacts would occur from development of these sites (the City requires 5 acres of parkland per 1,000 residents). Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project.
- **Transportation** - With development of a similar project on an alternate site, transportation impacts would occur from construction (vehicles and equipment, which would require a Traffic Control Plan) and operation (vehicles associated with the residential development). Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project. This Alternative would not eliminate the significant and unavoidable impacts (VMT impacts at the project and cumulative level) associated with this topic from the proposed Project.
- **Tribal Cultural Resources** - With development of a similar project on an alternate site, tribal cultural resource impacts could occur from development of these sites (conversion of agricultural lands to urban uses). Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project.
- **Utilities & Service Systems** - With development of a similar project on an alternate site, utility and service system impacts would occur from construction activities (water for dust control, solid waste disposal) and operational activities (water demand associated with the development, wastewater disposal, solid waste disposal). Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to

the proposed Project. This Alternative would not eliminate the significant and unavoidable impacts (cumulative only for water supply) associated with this topic from the proposed Project.

- **Wildfire** - With development of a similar project on an alternate site, wildfire impacts could occur from development of these sites (conversion of agricultural lands to urban uses). Since this Alternative would be of similar size and scale to the Project, impacts are determined to be similar to the proposed Project.

Refer to Table 4-1 for a comparison of each environmental topic for the Alternate Locations Alternative versus the proposed Project.

**Reduced (50%) Project Alternative**

A reduction of 50% in the Project's size and scope is a reasonable amount to illustrate what impact such an alternative would have on the significant effects of the proposed Project.

*Description*

This alternative would keep the same acreage, but would reduce the number of units from 825 to 412. All other project components, including overall acreage would remain (parks, etc.). This would result in larger lot sizes as compared to the proposed Project.

*Environmental Considerations*

Most of the environmental issues associated with this alternative would be similar to those of the proposed Project. Impacts from the Reduced (50%) Alternative, as compared to the Project, are summarized as follows:

- **Aesthetics** – With development of the Project site with 50% of the residential units (as compared to the proposed Project), aesthetic impacts would occur through the conversion of farmland to urban uses, introduction of light/glare, and construction of residential units on non-urbanized land. Since this Alternative would be on the same site as the Project, impacts are determined to be similar to the proposed Project.
- **Agriculture and Forestry Resources** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), agricultural impacts would occur through the conversion of farmland to urban uses. Therefore, impacts are similar to the proposed Project. This Alternative would not eliminate the significant and

unavoidable impacts (project and cumulative) associated with this topic from the proposed Project.

- **Air Quality** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), air quality impacts would occur from construction activities (construction vehicles and equipment, dust and other emissions) and from operational activities (vehicle trip emissions and other emissions from the development). According to the Project's Air Quality / Greenhouse Gas / Energy Study prepared for the Project, the proposed Project will have annual air pollutant emission rates that are less than the applicable San Joaquin Valley Air Pollution Control District thresholds of significance. Even though the proposed Project is below existing thresholds of significance, this alternative would have lower annual emission rates than the proposed project for the following criteria pollutants: CO, NOx, VOC, SOx, PM10 and PM2.5. Air pollutant emission rates associated with this alternative are thus lower than the proposed project due to the reduced number of residential units (and associated reduction in vehicle trips).
- **Biological Resources** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), biological impacts could occur from development of a previously agricultural site to urban uses. Since this Alternative would be on the same site as the Project, impacts are determined to be similar to the proposed Project. This Alternative would not eliminate the significant and unavoidable impacts (cumulative only) associated with this topic from the proposed Project.
- **Cultural Resources** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), cultural resource impacts could occur from development of a previously agricultural site to urban uses. Since this Alternative would be on the same site as the Project, impacts are determined to be similar to the proposed Project.
- **Energy** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), energy impacts would occur from construction activities (electricity, fuel) and operational activities (electricity, natural gas, fuel). However, since this Alternative would have 50% less residential units as compared to the proposed Project, energy impacts would be less than the proposed Project.
- **Geology/Soils** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), impacts to geology and soils would occur from construction activities (grading and land disturbing activities) and operational activities (the Alternative project would be subject to geotechnical evaluation). Since this

Alternative would be on the same site as the Project, impacts are determined to be similar to the proposed Project.

- **Greenhouse Gas Emissions** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), greenhouse gas emission impacts would occur from construction activities (construction equipment emissions and vehicle emissions) and operational activities (vehicle emissions). However, since this Alternative would have 50% less residential units as compared to the proposed Project, greenhouse gas emissions would be less than the proposed Project.
- **Hazards & Hazardous Materials** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), hazardous impacts would occur from construction activities (use and storage of hazardous substances) and operational activities (use and storage of hazardous substances). Since this Alternative would be on the same site as the Project, impacts are determined to be similar to the proposed Project.
- **Hydrology & Water Quality** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), hydrology and water quality impacts would occur from construction activities (water for dust control, requirement for preparation of a SWPPP, drainage control) and operational activities (water demand associated with the development, drainage control). However, since this Alternative would have 50% less residential units as compared to the proposed Project, hydrology and water quality impacts would be less than the proposed Project.This Alternative would not eliminate the significant and unavoidable impacts (cumulative only) associated with water supply from the proposed Project.
- **Land Use / Planning** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), land use and planning impacts would occur from development of existing agricultural lands to urban uses. The Alternative would not divide an established community. Since this Alternative would be on the same site as the Project, impacts are determined to be similar to the proposed Project.
- **Mineral Resources** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), mineral resource impacts could occur from construction activities (grading and ground-disturbing activities) and operational activities (conversion of land to urban uses). Since this Alternative would be on the same site as the Project, impacts are determined to be similar to the proposed Project.
- **Noise** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), noise impacts would occur from construction activities (construction equipment and vehicles) and operational activities (vehicles, air conditioners, televisions, radios, lawn mowers, etc.). However, since this Alternative

would have 50% less residential units as compared to the proposed Project, noise impacts would be less than the proposed Project.

- **Population & Housing** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), population and housing impacts would occur from development of these sites. However, since this Alternative would have 50% less residential units as compared to the proposed Project, population and housing impacts would be less than the proposed Project.
- **Public Services** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), public service impacts would occur from development of these sites (need for police, fire, schools and other public facilities). However, since this Alternative would have 50% less residential units as compared to the proposed Project, public service impacts would be less than the proposed Project.
- **Recreation** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), recreation impacts would occur from development of the site (the City requires 5 acres of parkland per 1,000 residents). However, since this Alternative would have 50% less residential units as compared to the proposed Project, recreation impacts would be less than the proposed Project.
- **Transportation** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), transportation impacts would occur from construction (vehicles and equipment, which would require a Traffic Control Plan) and operation (vehicles associated with the residential development). However, since this Alternative would have 50% less residential units as compared to the proposed Project, transportation impacts would be less than the proposed Project.This Alternative would not eliminate the significant and unavoidable impacts (VMT impacts at the project and cumulative level) associated with this topic from the proposed Project.
- **Tribal Cultural Resources** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), tribal cultural resource impacts could occur from development of these sites (conversion of agricultural lands to urban uses). Since this Alternative would be on the same site as the Project, impacts are determined to be similar to the proposed Project.
- **Utilities & Service Systems** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), utility and service system impacts would occur from construction activities (water for dust control, solid waste disposal) and operational activities (water demand associated with the development, wastewater disposal, solid waste disposal). However, since this Alternative would have 50% less residential units as compared to the proposed Project, utility and service system impacts

would be less than the proposed Project. This Alternative would not eliminate the significant and unavoidable impacts (cumulative only for water supply) associated with this topic from the proposed Project.

- **Wildfire** - With development of the Project site with 50% of the residential units (as compared to the proposed Project), wildfire impacts could occur from development of these sites (conversion of agricultural lands to urban uses). Since this Alternative would be on the same site as the Project, impacts are determined to be similar to the proposed Project.

Refer to Table 4-1 for a comparison of each environmental topic for the Reduced (50%) Project Alternative versus the proposed Project.

*Economic Considerations*

Economics are not generally included in CEQA analysis unless a project results in blight to other areas of the City. However, in this instance, one of the Project objectives to is provide a residential project that provides a variety of housing options within the City's growing population base. A reduced project size is likely to make the project infeasible because it would not meet the City's goal of having diverse housing. A lower density project would likely result in a single-family neighborhood, which does not provide a variety of housing types and would not assist the City in meeting its General Plan and Housing Element requirements and objectives.

## 4.4 Summary of Potential Impacts of Alternatives

Table 4-1 provides a summary and side-by-side comparison of the proposed project with the impacts of each of the alternatives analyzed. Please note that in Alternatives 1 through 3 in Table 4-1, the references to "less, similar, or greater," refer to the impact of the alternative compared to the proposed project, and the impacts "no impact, less than significant, or significant and unavoidable," in the parentheses refer to the significant impact of the specific alternative.

**Table 4-1**
**Alternatives Potential Impact Analysis**

| Environmental Issues | Proposed Project | No Project | Alternate Sites | Reduced (50%) Project |
|---|---|---|---|---|
| Aesthetics | Less than Signifcant | Less | Similar | Similar |
| Agriculture / Forest Resources | Significant and unavoidable (project and cumulative) | Less | Similar | Less |
| Air Quality | Less than Signifcant | Less | Similar | Less |
| Biological Resources | Significant and unavoidable (cumulative only) | Less | Similar | Less |
| Cultural Resources | Less than Signifcant | Less | Similar | Similar |
| Geology and Soils | Less than Signifcant | Less | Similar | Similar |
| Greenhouse Gas Emissions | Less than Signifcant | Less | Similar | Less |
| Hazards and Hazardous Materials | Less than Signifcant | Less | Similar | Similar |
| Hydrology and Water Quality | Significant and unavoidable – water supply (cumulative only) | Less | Similar | Less |
| Land Use / Planning | Less than Signifcant | Less | Similar | Similar |
| Noise | Less than Signifcant | Less | Similar | Less |

| Environmental Issues | Proposed Project | No Project | Alternate Sites | Reduced (50%) Project |
|---|---|---|---|---|
| Population / Housing | Less than Signifcant | Less | Similar | Less |
| Public Services | Less than Signifcant | Less | Similar | Less |
| Recreation | Less than Signifcant | Less | Similar | Less |
| Transportation and Traffic | Significant and unavoidable - VMT (project and cumulative) | Less | Similar | Less |
| Tribal Cultural Resources | Less than Signifcant | Less | Similar | Similar |
| Utilities and Service Systems | Significant and unavoidable – water supply (cumulative only) | Less | Similar | Less |
| Cumulative Impacts | Significant and unavoidable for Agriculture, Biology, Hydrology, Transportation, and Utilities | Less | Similar | Less |
| Impact Reduction | | Yes | No | Yes |

## Environmentally Superior Alternative

As presented in the comparative analysis above, and as shown in Table 4-1, there are a number of factors in selecting the environmentally superior alternative. An EIR must identify the environmentally superior alternative to the project. The No Project Alternative would be environmentally superior to the Project on the basis of its minimization or avoidance of physical environmental impacts. However, CEQA Guidelines Section 15126.6(e)(2) states:

> *The "no project" analysis shall discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. If the environmentally superior alternative is the "no project"*

*alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives*.

Because the No Project Alternative cannot be the Environmentally Superior Alternative under CEQA. the Reduced (50%) Project Alternative would be the Environmentally Superior alternative because it would result in less adverse physical impacts to the environment with regard to air, water, noise, public services, population/housing, utilities and traffic. However, the Reduced (50%) Project Alternative does not eliminate the proposed Project's significant and unavoidable impacts associated with Agriculture - Loss of Farmland (project and cumulative), Biological resources (cumulative only), Hydrology – Water Supply (cumulative only), or Transportation (Vehicle Miles Traveled impacts) (project and cumulative). Furthermore, the Reduced (50%) Project Altenative does not meet all of the Project objectives, particularly with regard diversity of housing.

**Summary and Determination**

Only the No Project and Reduced Project Alternatives could potentially result in fewer impacts than the proposed Project's impacts. These Alternatives however, would not meet the objectives of the proposed Project. After this full, substantial, and deliberate analysis, the proposed Project remains the preferred alternative.

# Chapter 5

# OTHER CEQA REQUIREMENTS

# CEQA CONSIDERATIONS

## 5.1 Growth-Inducing Impacts

CEQA Section 15126 (d) requires that any growth-inducing aspect of a project be addressed in an EIR. This discussion includes consideration of ways in which the proposed Project could directly or indirectly foster economic or population growth with the construction and operation of the proposed Project in the surrounding area. Projects which could remove obstacles to population growth (such as a major public service expansion) are also considered in this discussion. The proposed Project is the establishment of a residential development that is being proposed in response to the demand for housing in the area. The Project is consistent with the City of Lemoore's General Plan and Zoning Ordiance and will connect to all existing City utility services. The anticipated population and housing unit increase associated with the proposed Project are within the growth projections of the City's 2030 General Plan. The proposd Project would create a relatively minor amount of new (temporary) employment opportunities during construction; however, those positions would likely be readily filled by the existing employment base. There are no other aspects of the Project (such as creation of oversized utility lines, etc.) that would induce further growth in the area. The proposed Project would not result in significant growth-inducing impacts.

**Conclusion:** The project would have ***less-than-significant*** growth-inducing impacts.

## 5.2 Irreversible Environmental Changes

Section 15126(f) of the CEQA Guidelines requires that an EIR include a discussion of significant irreversible environmental changes that would result from project implementation. CEQA Section 15126.2(c) identifies irreversible environmental changes as those involving a large commitment of nonrenewable resources or irreversible damage resulting from environmental accidents.

Irreversible changes associated with the project include the use of nonrenewable resources during construction, including concrete, plastic, and petroleum products. During the operational phase of the proposed Project, energy would be used for lighting, heating, cooling, and other requirements and petroleum products would be used by vehicles associated with the residents of the proposed development. The use of these resources would not be substantial and would not constitute a significant effect.

**Conclusion:** The project would have ***less-than-significant*** irreversible environmental changes.

# Chapter 6

# Preparers

# PREPARERS

## 6.1 List of Preparers

**Crawford & Bowen Planning, Inc.** (EIR Consultants, Agricultural Conversion Study and Water Supply Assessment)

- Travis Crawford, AICP, Principal Environmental Planner
- Emily Bowen, LEED AP, Principal Environmental Planner

**JLB Traffic Engineering, Inc.** (Traffic Study)

**Mitchell Air Quality Consulting** (Air Quality/Energy/GHG Study)

**Colibri Ecological Consulting, LLC.** (Biological Survey/Report)

**ASM Affiliates** (Cultural Survey/Report)

**WJV Acoustics** (Noise Assessment)

## 6.2 Persons and Agencies Consulted

**City of Lemoore**

- Kristie Bailey, Management Analyst
- Steve Brandt, AICP, Contract City Planner
- Jaymie Brauer, Contract City Planner

# Appendices

# Appendix A

## Initial Study / Notice of Preparation

# Appendix B

## Agricultural Conversion Study

# Appendix C

## Air Quality and GHG/Energy Analysis

# Appendix D

## Biological Resource Evaluation

# Appendix E

## Cultural Resources Study

# Appendix F

## Phase I Environmental Assessment

# Appendix G

## SB 610 Water Supply Assessment

# Appendix H

## Noise Assessment

# Appendix I-1

## Traffic Impact Analysis Report

# Appendix I-2

## Vehicle Miles Traveled Analysis

# APPENDIX A

# INITIAL STUDY

## Lacey Ranch Area Master Plan Project

August 2020

PREPARED FOR:

City of Lemoore
711 Cinnamon Drive
Lemoore, CA 93245

PREPARED BY:

Crawford & Bowen Planning, Inc.
113 N. Church Street, Suite 302
Visalia, CA 93291

Initial Study

# Lacey Ranch Area Master Plan Project

Prepared for: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Contact: Judy Holwell, Community Development Director


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August 2020

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# Chapter 1

# INTRODUCTION

# INTRODUCTION

## 1.1 Project Summary

This document is the Initial Study (IS) on the potential environmental effects of the proposed Lacey Ranch Area Master Plan Project (Project). The Project Applicant is proposing to subdivide and develop approximately 156-acres of vacant land into a 825-unit residential community with a mix of single-family and multi-family housing units. The proposed Project is bounded by W. Lacey Blvd to the north and $18^{th}$ Avenue to the west.

The proposed Project is more fully described in Chapter Two – Project Description.

The City of Lemoore will act as the Lead Agency for this project pursuant to the *California Environmental Quality Act (CEQA)* and the *CEQA Guidelines*.

## 1.2 Purpose of the Initial Study

An Initial Study is a preliminary analysis that is prepared to determine the relative environmental impacts associated with a proposed project. It is designed as a measuring mechanism to determine if a project will have a significant adverse effect on the environment, thereby triggering the need to prepare an Environmental Impact Report (EIR). This Initial Study has been prepared consistent with CEQA Guidelines Section 15063, to determine if the proposed Lacey Ranch Area Master Plan Project may have a significant effect upon the environment. A Notice of Preparation (NOP) of an EIR has been prepared along with this IS.

## 1.3 Document Format

This IS contains four chapters, and appendices. Chapter One - Introduction, provides an overview of the project and the CEQA environmental documentation process. Chapter Two - Project Description, provides a detailed description of project objectives and components. Chapter Three - Initial Study Checklist, presents the CEQA checklist and environmental analysis for all impact areas. If the proposed Project does not have the potential to significantly impact a given issue area, the relevant section provides a brief discussion of the reasons why no impacts are expected. If the project could have a potentially significant impact on a resource, the issue area discussion provides a description of potential impacts, and appropriate mitigation measures and/or permit requirements that would reduce those impacts to a less than significant level. Finally, if impacts are determined to be potentially significant, those topics will be noted and will be analyzed in the

forthcoming EIR that will be prepared for the Project. Chapter Four - List of Preparers, provides a list of key personnel involved in the preparation of the IS.

Environmental impacts are separated into the following categories:

**Potentially Significant Impact**. This category is applicable if there is substantial evidence that an effect may be significant, and no feasible mitigation measures can be identified to reduce impacts to a less than significant level. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

**Less Than Significant After Mitigation Incorporated.** This category applies where the incorporation of mitigation measures would reduce an effect from a "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measure(s), and briefly explain how they would reduce the effect to a less than significant level (mitigation measures from earlier analyses may be cross-referenced).

**Less Than Significant Impact.** This category is identified when the project would result in impacts below the threshold of significance, and no mitigation measures are required.

**No Impact.** This category applies when a project would not create an impact in the specific environmental issue area. "No Impact" answers do not require a detailed explanation if they are adequately supported by the information sources cited by the lead agency, which show that the impact does not apply to the specific project (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis.)

Regardless of the type of CEQA document that must be prepared, the basic purpose of the CEQA process as set forth in the CEQA Guidelines Section 15002(a) is to:

(1) Inform governmental decision makers and the public about the potential, significant environmental effects of proposed activities.
(2) Identify ways that environmental damage can be avoided or significantly reduced.
(3) Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
(4) Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

The Initial Study contained in Section Three of this document has determined that there are potentially significant impacts associated with the Project and an EIR will be prepared.

# Chapter 2

# PROJECT DESCRIPTION

# Project Description

## 2.1 Project Location

The proposed Project is located on approximately 156-acres immediately north of the City of Lemoore in Kings County and is bounded by W. Lacey Blvd to the north and 18th Avenue to the west. The Project is on assessor parcel number 021-030-057-000. See Figure 1 – Regional Location, Figure 2 – Vicinity Map and Figure 3 – Site Aerial. The site lies within a portion of the NW quarter of Section 35, Township 18 South, Range 20 East, Mount Diablo Base and Meridian.

## 2.2 Surrounding Land Use

The proposed Project site is located in an area that is dominated by farmland / agricultural operations and scattered rural residential housing to the north, east and west, and residential development to the south. The site is partially designated by the City of Lemoore General Plan for future residential uses and is currently zoned as Limited Agricultural-10 District (AL-10) by Kings County. Approximately one-third of the site (the southern one-third) is within the City's Sphere of Influence (SOI) while the remaining two-thirds are currently outside the SOI. The entire site is proposed for annexation into the City limits of Lemoore. As of Spring 2020, the land is being farmed for alfalfa. Table 2-1 shows land uses and zoning designations of adjacent parcels surrounding the site.

**Table 2-1: Surrounding Land Use and Zoning**

| Location | Existing Land Use | Current Zoning Classification |
|---|---|---|
| **North** | Agriculture | AL-10 (Limited Agricultural-10 District) – County |
| **South** | Residential | Low Density Residential (RLD) - City |

| Location | Existing Land Use | Current Zoning Classification |
|---|---|---|
| **West** | Agriculture/City Water tank and treatment facility | AL-10 (Limited Agricultural-10 District) – County / PR (Parks and Recreation/Ponding Basin) - City |
| **East** | Agriculture | AL-10 (Limited Agricultural-10 District) - County |

**Figure 1 - Regional Location**

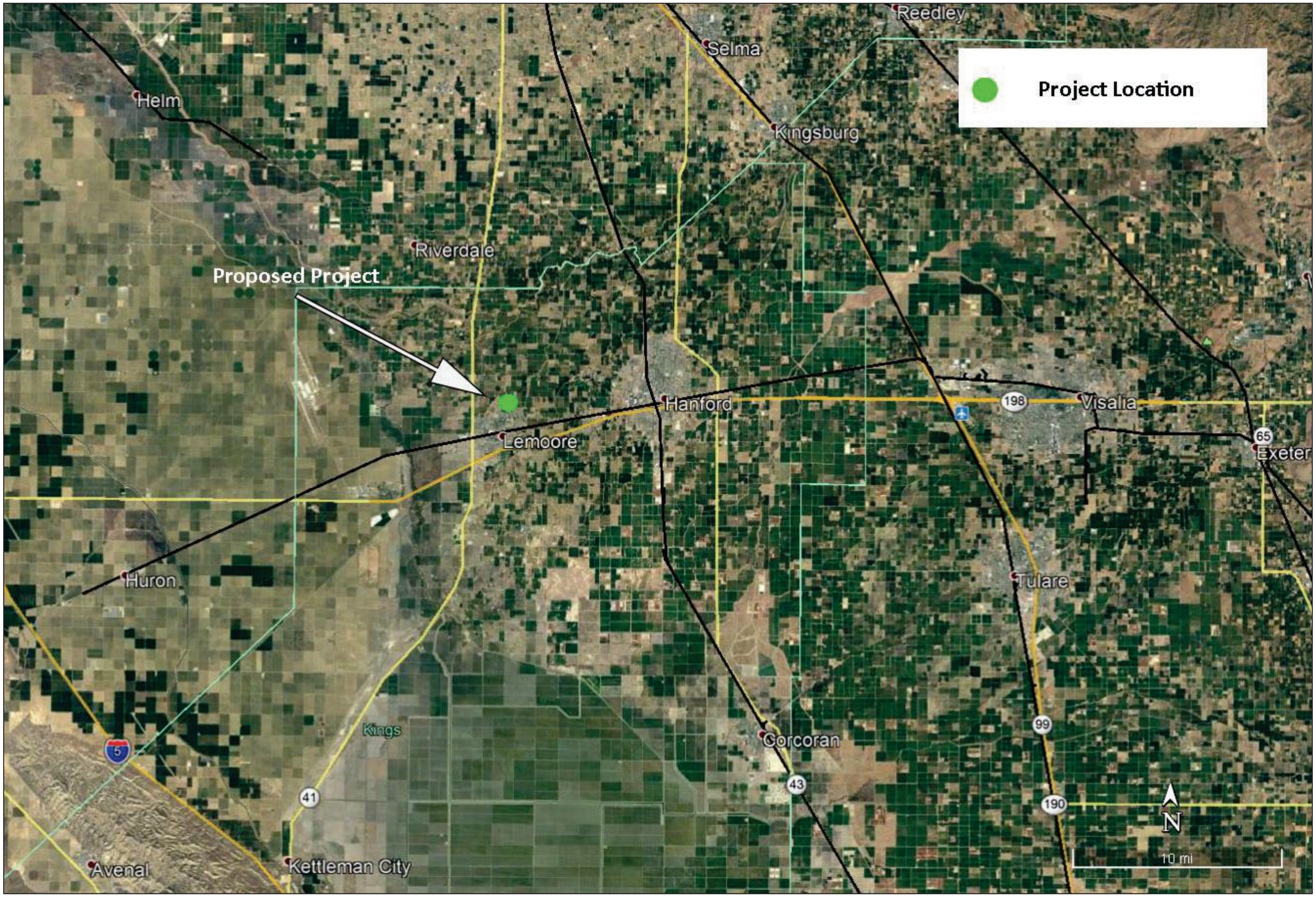


**Figure 2 - Project Vicinity**

**Figure 3 - Site Aerial**

## 2.3 Project Description

This EIR examines the potential environmental impacts of a proposed Project that includes:

- Annex approximately 156 acres from Kings County into the City of Lemoore
- Approve a General Plan Amendment
- Approve a Zone Change
- Adopt the Lacey Ranch Area Master Plan through a Planned Unit Development
- Approve the Project's Tentative Tract Map
- Amend Sphere of Influence

Within the Lacey Ranch Area Master Plan, the Project applicant is proposing to subdivide and develop approximately 156 acres of land into a planned residential community with a mix of single-family and multi-family housing units. The Project will be constructed in four phases, as outlined below. The exact numbers of each housing type may vary slightly, depending on final density. However, there will be a maximum of 825 housing units in total (see Figure 4). Specific housing types include:

- ±164 compact lots with an average lot size of 4,500 square feet
- ±310 medium lots with an average lot size of 6,500 square feet
- ±73 estate lots with an average lot size of 9,500 square feet
- ±145 multifamily units at 20 units per acre
- ±59 multifamily units at 12 units per acre

Table 2-2 depicts the proposed land use designations and zone districts of the proposed Project.

**Table 2-2: Proposed Land Use and Zoning Designations**

| Proposed Land Use | Proposed Land Use Designation | Proposed Zone District |
|---|---|---|
| Single Family lots | Low Density Residential | RLD – Low Density Residential |
| 12 unit per acre multifamily | Medium Density Residential | RMD – Medium Density Residential |
| 20 unit per acre multifamily | High Density Residential | RHD – High Density Residential |
| Parks | Parks/Recreation | PR – Parks/Recreation |
| Storm drainage basin | Greenway/Detention Basin | PR – Parks/Recreation |

*Parks and Open Space*

The Project includes a total of four parks for a total of 7.9 acres and 1.64 acres of trail area, as depicted on Figure 4. The 1.64 acres of trail area will be designated and zoned consistent with the designations and zoning of their adjacent parcels.

*Site Circulation and Access*

The site has been designed with seven points of ingress and egress. One of these points connects at W. Lacey Blvd along the northern edge of the Project; three access points connect at 18th Avenue on the western edge; two access points are along the southern edge; and one access point is along the eastern edge. The Project will be responsible for construction of internal roadways as well as for potential improvements to surrounding roadways to accommodate the Project.

*Infrastructure*

The Project includes the construction of a 4.39-acre storm drain basin and will require connection to various City-operated systems such as sewer, water and storm drain facilities. The Project will be responsible for construction of connection points to the City's existing infrastructure. The Project also includes improvements and landscaping along the frontage roads and within the site itself.

The Project will require a 50-foot easement for irrigation water to Lemoore Canal & Irrigation District Co. as the canal along a portion of the western and southern boundary will be abandoned and relocated.

*Phasing / Construction Schedule*

Proposed Project construction will require site preparation activities such as demolition to remove the existing alfalfa crop and site grading activities. Construction is expected to occur over 16 years as determined by market demands and will be constructed over four phases, broken down as follows:

- Phase 1 – 125 single family lots and 90 multifamily lots
- Phase 2 – 125 single family lots and 100 multifamily lots
- Phase 3 – Dependent on market conditions
- Phase 4 – Dependent on market conditions

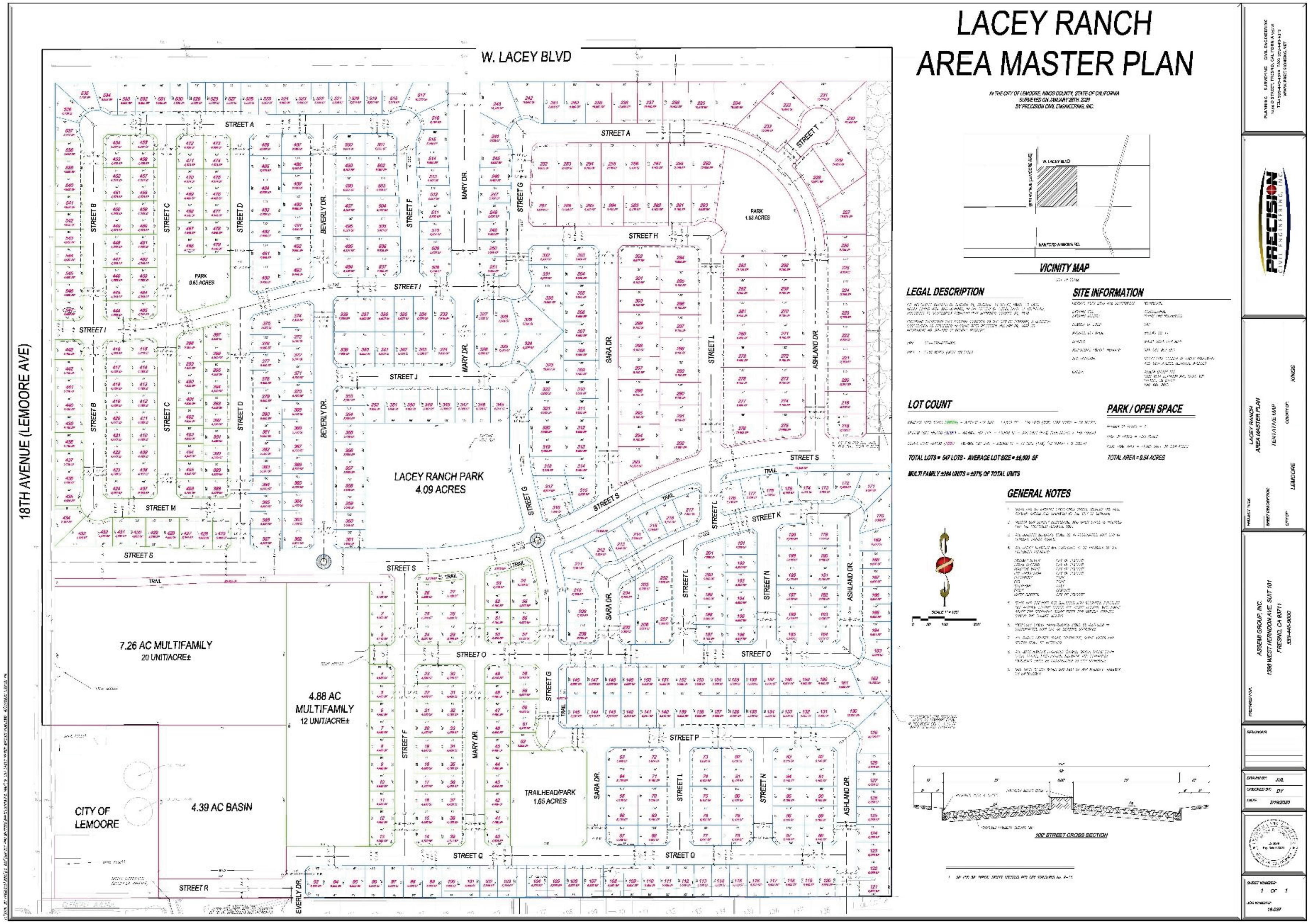
It is anticipated that the Project would begin development in 2022.

## 2.4 Project Objectives

In accordance with CEQA Guidelines Section 15124(b), the following are the City of Lemoore's Project objectives:

- To provide a variety of housing opportunities with a range of densities, styles, sizes and values that will be designed to satisfy existing and future demand for quality housing in the area.
- To provide a sense of community and walkability within the development through the use of street patterns, parks/trails, landscaping and other project amenities.
- To provide a residential development that is compatible with surrounding land uses and is near major services.
- To provide a residential development that assists the City in meeting its General Plan and Housing Element requirements and objectives.

**Figure 4 - Site Plan**



## 2.5 Other Required Approvals

*City of Lemoore*

The City of Lemoore is Lead Agency for the proposed Project, pursuant to the California Environmental Quality Act (CEQA). The Project will require the following approvals and/or entitlements from the City of Lemoore:

- Initiation of annexation from Kings County into the City of Lemoore
- Approval of a General Plan Amendment
- Approval of a Zone Change
- Adoption of the Lacey Ranch Master Plan through a Planned Unit Development
- Approval of Tentative Tract Map(s)
- Approval of Major Site Plan Review
- Certification of the Project EIR
- Certification of the Final EIR
- Adoption of the Mitigation Monitoring and Reporting Program
- Adoption of 15091 and 15093 Findings and Statement of Overriding Considerations
- Issuance of Grading / Building Permits
- Approval of the Project Water Supply Assessment

*Other Public Agencies*

The Project will require various permits and/or entitlements from regulatory agencies. These may include, but not be limited to the following:

- Kings County LAFCO – approval of annexation and Sphere of Influence Amendment
- San Joaquin Valley Air Pollution Control District – approval of Rule 9510 AIA Application
- Regional Water Quality Control Board- Storm Water Pollution Prevention Plan

# Chapter 3

# IMPACT ANALYSIS

# Initial Study Checklist

## 3.1 Environmental Checklist Form

**Project title:**

Lacey Ranch Area Master Plan Project

**Lead agency name and address:**

City of Lemoore
711 W. Cinnamon Drive
Lemoore, CA 93245

**Contact person and phone number:**

Judy Holwell, Community Development Director
City of Lemoore
559.924.6744 Ext. 740

**Project location:**

The proposed Project is located on approximately 156-acres immediately north of the City of Lemoore in Kings County and is bounded by W. Lacey Blvd to the north and 18th Avenue to the west. The Project is on Assessor Parcel Number 021-030-057-000. See Figure 1 – Regional Location, Figure 2 – Vicinity Map and Figure 3 – Site Aerial. The site lies within a portion of the NW quarter of Section 35, Township 18 South, Range 20 East, Mount Diablo Base and Meridian.

**Project sponsor's name/address:**

Assemi Group, Inc.
1396 W. Herndon Ave., Suite 110
Fresno, CA 93711

**General plan designation:**

Limited Agriculture 10 acres (by Kings County)

**Zoning:**

AL-10 (by Kings County)

**Description of project:**

The Project applicant is proposing to subdivide and develop 156 acres of vacant land into an 825-unit planned residential community with a mix of single-family and multi-family housing units. The proposed Project is more fully described in Chapter Two – Project Description.

**Surrounding land uses/setting:**

The proposed Project site is located in an area that is dominated by farmland / agricultural operations and scattered rural residential housing to the north, east and west, and residential development to the south. Approximately one-third of the site (the southern one-third) is within the City's Sphere of Influence (SOI) while the remaining two-thirds are currently outside the SOI. The entire site is proposed for annexation into the City limits of Lemoore. As of Spring 2020, the land is being farmed for alfalfa. The environmental setting is fully described in Chapter Two – Project Description.

**Other Required Approvals:**

*City*

The City of Lemoore will be the Lead Agency for the proposed Project, pursuant to the California Environmental Quality Act (CEQA). The Project will require the following approvals from the City of Lemoore:

- Annexation of 156 acres from Kings County into the City of Lemoore
- Adoption of General Plan Amendment
- Adoption of Zone Change
- Adoption of Lacey Ranch Master Plan through a Planned Unit Development
- Approval of Tentative Tract Map
- Approval of Major Site Plan Review
- Certification of Project EIR
- Certification of Final EIR
- Adoption of Mitigation Monitoring and Reporting Program
- Adoption of 15091 and 15093 Findings and Statement of Overriding Considerations
- Issuance of Grading / Building Permits
- Approval of Project Water Supply Assessment

*Other Public Agencies*

The Project will require various permits and/or entitlements from regulatory agencies. These may include, but not be limited to the following:

- Kings County LAFCO – approval of annexation and Sphere of Influence Amendment
- San Joaquin Valley Air Pollution Control District – approval of Rule 9510 AIA Application
- Regional Water Quality Control Board – Storm Water Pollution Prevention Plan

**California Native American Tribal Consultation:**

*Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun or is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?*

In accordance with Assembly Bill (AB) 52, potentially affected Tribes will be formally notified of this Project and will be given the opportunity to request consultation on the Project. The City will contact the Native American Heritage Commission, requesting a contact list of applicable Native American Tribes. Once provided to the City, the City will provide letters to the listed Tribes, notifying them of the Project and requesting consultation, if desired. The City will also formally notify the Santa Rosa Rancheria Tachi Yokut Tribe, which has formally requested of the City to receive notice.

## 3.2 Environmental Setting

### Regional Setting

The City of Lemoore (City) is situated within the northern portion of Kings County, in the center of the San Joaquin Valley. The City is located near the junction of California State Route (SR) 198 and SR 41. The City of Lemoore City Limits encompass approximately 5,430 acres (8.5 square

miles) of incorporated land. The existing City Limits include residential, commercial, professional office and industrial developments as well as public facilities, including City Hall, Police Department, two fire stations, schools, wastewater treatment facility, Lemoore Municipal Complex and numerous park and recreational facilities.[1]

The Naval Air Station Lemoore (NAS Lemoore) is located approximately three miles west of Lemoore's City Limits. NAS Lemoore is the United States Navy's West Coast Master Jet Base and is a major economic driver for Lemoore. According to the 2008 General Plan, the base provides approximately 1,400 civilian jobs to people living in the City.[2]

The Santa Rosa Rancheria tribal lands are located approximately two miles south of the City and it consists of approximately 40 acres owned by the Santa Rosa Rancheria Tachi Yokut Tribe. The Tachi Palace Casino Resort is located at the northern edge of the Santa Rosa Rancheria. According to the 2008 General Plan, the casino is the second largest employer for people living in Lemoore, providing approximately 800 jobs.[3]

**Project Site**

The proposed Project site is located just north of the northern Lemoore City Limits in an area that is generally utilized for agricultural purposes. The site is currently in agricultural production with alfalfa. A City municipal well is located adjacent to the southwest site boundary. The lower third of the site is within the City's SOI and is planned for development. Site photos A and B were taken in June 2020 by Emily Bowen, Environmental Consultant for Lemoore.

Meadow Lane Elementary School is approximately 0.1 mile to the south of the site, while a commercial development with restaurants is approximately 0.35 miles to the south of the site. There is no public airport in the City; however, the nearest public airport is the Hanford municipal airport, approximately eight miles to the east. The NAS Lemoore air strips are approximately nine miles to the west of the site.

[1] City of Lemoore 2030 General Plan. May 2008. https://lemoore.com/communitydevelopment/general-plan/. Page 1-6. Accessed June 2020.

[2] Ibid. Page 1-4.

[3] Ibid.

**Site View A – View from 18th Avenue looking north**

**Site View B – View from Lacey Blvd looking south along eastern boundary**

## 3.3 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

| | | |
|---|---|---|
| ☐ Aesthetics | ☒ Agriculture Resources and Forest Resources | ☒ Air Quality |
| ☒ Biological Resources | ☒ Cultural Resources | ☒ Energy |
| ☒ Geology / Soils | ☒ Greenhouse Gas Emissions | ☒ Hazards & Hazardous Materials |
| ☒ Hydrology / Water Quality | ☒ Land Use / Planning | ☐ Mineral Resources |
| ☒ Noise | ☒ Population / Housing | ☒ Public Services |
| ☐ Recreation | ☒ Transportation | ☒ Tribal Cultural Resources |
| ☒ Utilities / Service Systems | ☐ Wildfire | |

## 3.3 Determination

Based on this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED

NEGATIVE DECLARATION will be prepared.

☒ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

| | |
|---|---|
| Judy Holwell, Community Development Director<br>City of Lemoore | Date |

# I. AESTHETICS

| **Except as provided in Public Resources Code Section 21099, would the project:** | Potentially Significant Impact | Less than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Have a substantial adverse effect on a scenic vista? | ☐ | ☐ | ☒ | ☐ |
| b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? | ☐ | ☐ | ☒ | ☐ |
| c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and regulations governing scenic quality? | ☐ | ☐ | ☒ | ☐ |
| d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? | ☐ | ☐ | ☒ | ☐ |

## RESPONSES

a. Have a substantial adverse effect on a scenic vista?

**Less than Significant Impact.** The Project Applicant is proposing to subdivide and develop 156 acres of land into a residential community with a mix of single-family and multi-family housing units. The proposal features five different types of housing for a total of up to 825 residential units at full buildout. The five different types of housing consist of single family units on compact lots, medium lots, estate lots, and multifamily units at two different densities. In addition to housing, the Project will include park areas, trail areas, frontage improvements, roadway improvements, landscaping and related features.

The City of Lemoore 2030 General Plan (General Plan) Community Design Element includes an implementing action specific to scenic vistas:

- CD-I-4: Maintain scenic vistas to the Coalinga Mountains, other natural features, and landmark buildings.

The General Plan states that there are no buildings or structures listed in the National Register of Historic Places or California Historic Landmarks within or in the vicinity of the proposed Project site. Similarly, there are no natural features or landmark buildings within or in the vicinity of the proposed Project site. The proposed Project will not impede scenic vistas to the Coalinga Mountains to the west as no building within the development will be greater than two stories in height and all structures will conform to design standards set forth by the City's General Plan, Zoning Ordinance, and Municipal and Building Codes. In addition, the proposed Project site is located immediately adjacent to a residential subdivision and, will appear as an extension of an existing residential development. The Project will not result in a use that is visually incompatible with the surrounding area.

The impact will be ***less than significant*** and will not be evaluated in the EIR.

**Mitigation Measures:** None are required.

b. <u>Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?</u>

**Less than Significant Impact.** See Response to Impact a, above. There are no trees, rock outcroppings or historic buildings located on or near the site. There are two state highways within the City of Lemoore; SR 41 is 1.5 miles to the west of the proposed Project site while SR 198 is two miles to the south. Both roadways are listed as an "Eligible State Scenic Highway," however; neither roadway is designated as such within Kings County. Impacts would be considered ***less than significant*** and will not be evaluated in the EIR.

**Mitigation Measures:** None are required.

<u>c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and regulations governing scenic quality?</u>

**Less than Significant Impact.** The Project is currently undeveloped agricultural land located immediately north of an urbanized, residential neighborhood. The overall visual character of the site itself would change with the proposed residential uses; however, the Project would be similar in visual appearance to the existing residential developments found throughout the City. With approval of the proposed General Plan Amendment and Zone Change , the Project would be consistent with the zoning and land use designations. The development has been designed so that all structures will conform to design standards set forth by the City's General Plan, Zoning Ordinance, Municipal Codes and Improvement Standards. The Project will not result in a use that is visually incompatible with the surrounding area. The impact is considered to be ***less than significant*** and will not be evaluated in the EIR.

**Mitigation Measures:** None are required.

d. <u>Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?</u>

**Less Than Significant Impact.** Nighttime lighting is necessary to provide and maintain safe, secure, and attractive environments; however, these lights have the potential to produce spillover light and glare and waste energy, and if designed incorrectly, could be considered unattractive. Light that falls beyond the intended area is referred to as "light trespass." Types of light trespass include spillover light and glare. Minimizing all these forms of obtrusive light is an important environmental consideration. A less obtrusive and well-designed energy efficient fixture would face downward, emit the correct intensity of light for the use, and incorporate energy timers.

Spillover light is light emitted by a lighting installation that falls outside the boundaries of the property on which the installation is sited. Spillover light can adversely affect light-sensitive uses, such as residential neighborhoods at nighttime. Because light dissipates as it travels from the source, the intensity of a light fixture is often increased at the source to compensate for the dissipated light. This can further increase the amount of light that illuminates adjacent uses. Spillover light can be minimized by using only the level of light necessary, and by using cutoff type fixtures or shielded light fixtures, or a combination of fixture types.

Glare results when a light source directly in the field of vision is brighter than the eye can comfortably accept. Squinting or turning away from a light source is an indication of glare. The presence of a bright light in an otherwise dark setting may be distracting or annoying, referred to as discomfort glare, or it may diminish the ability to see other objects in the darkened environment, referred to as disability glare. Glare can be reduced by design features that block direct line of sight to the light source and that direct

light downward, with little or no light emitted at high (near horizontal) angles, since this light would travel long distances. Cutoff-type light fixtures minimize glare because they emit relatively low-intensity light at these angles.

Currently the sources of light in the Project area are from streetlights, vehicles traveling along adjacent roadways, and security lighting from the agricultural uses in the area and lights from housing in the area. The Project would include nighttime lighting such as streetlights, residential outdoor lighting, vehicle lights and other similar urban lighting. The proposed Project would be in compliance with the City's lighting standards established in the City's 2030 General Plan Community Design Element, Municipal Code (Title 8, Chapter 1), Zoning Ordinance (Title 9, Chapter 5, Article B, Section 4), and Improvement Standards (STD No. ST-10 through ST-11), to ensure that the proposed Project is not a source of substantial light or glare that would adversely affect day or nighttime views in the area.

Potential impacts are considered to be ***less than significant*** will not be evaluated in the EIR

**Mitigation Measures:** None are required.

# II. AGRICULTURE AND FOREST RESOURCES

| **Would the project:** | Potentially Significant Impact | Less than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | ☒ | ☐ | ☐ | ☐ |
| b. Conflict with existing zoning for agricultural use, or a Williamson Act contract? | ☒ | ☐ | ☐ | ☐ |
| c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))? | ☒ | ☐ | ☐ | ☐ |
| d. Result in the loss of forest land or conversion of forest land to non-forest use? | ☒ | ☐ | ☐ | ☐ |
| e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use? | ☒ | ☐ | ☐ | ☐ |

# RESPONSES

a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?

c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

d. Result in the loss of forest land or conversion of forest land to non-forest use?

e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

**Potentially Significant Impact.** The Project site includes 156 acres of farmland that is currently under crop cultivation. The Project would result in the conversion of agricultural lands, therefore, this impact is ***potentially significant*** and this topic will be addressed in the EIR.

The EIR will describe the agricultural resources in the proposed Project vicinity and a Land Evaluation and Site Assessment (LESA) will be prepared in compliance with methodology set forth by the California Department of Conservation. An Agricultural Conversion Study will also be prepared and will be the basis of the analysis discussed in the EIR.

# III. AIR QUALITY

| Would the project: | Potentially Significant Impact | Less than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Conflict with or obstruct implementation of the applicable air quality plan? | ☒ | ☐ | ☐ | ☐ |
| b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard? | ☒ | ☐ | ☐ | ☐ |
| c. Expose sensitive receptors to substantial pollutant concentrations? | ☒ | ☐ | ☐ | ☐ |
| d. Result in other emissions (such as those leading to odors or adversely affecting a substantial number of people)? | ☒ | ☐ | ☐ | ☐ |

## RESPONSES:

a. Conflict with or obstruct implementation of the applicable air quality plan?

b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

c. Expose sensitive receptors to substantial pollutant concentrations?

d. Result in other emissions (such as those leading to odors or adversely affecting a substantial number of people)?

**Potentially Significant Impact.** The proposed Project is located in Kings County within the San Joaquin Valley Air Basin (SJVAB), where the San Joaquin Valley Air Pollution Control District (SJVAPCD) acts as the regulatory agency for air pollution control and is the local agency empowered to regulate air pollutant emissions within the proposed Project area.

The SJVAB is designated as being in nonattainment by California Air Quality Standards (CAAQS) for O3, PM10, and PM 2.5. To meet Federal Clean Air Act (CAA) requirements, the SJVAPCD has multiple air quality attainment plan documents, including the 2016 Ozone Plan, 2007 PM10 Maintenance Plan and Request for Redesignation, and the 2016 PM2.5 Plan. The Project will contribute to air quality impacts from construction and operation which may result in exceedance of established thresholds. Therefore, this impact is ***potentially significant,*** and this topic will be addressed in the EIR.

An Air Quality Analysis Report will be prepared and will be the basis of the analysis discussed in the EIR.

# IV. BIOLOGICAL RESOURCES

| Would the project: | Potentially Significant Impact | Less than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | ☒ | ☐ | ☐ | ☐ |
| b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | ☒ | ☐ | ☐ | ☐ |
| c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | ☒ | ☐ | ☐ | ☐ |
| d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? | ☒ | ☐ | ☐ | ☐ |

# IV. BIOLOGICAL RESOURCES

| **Would the project:** | Potentially Significant Impact | Less than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | ☒ | ☐ | ☐ | ☐ |
| f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? | ☒ | ☐ | ☐ | ☐ |

## RESPONSES

a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

**Potentially Significant Impact.** The 156-acre Project site is located in an area that has been in agricultural production for the past several decades. The site may provide habitat or foraging ground for special status species and as such, ***potentially significant*** impacts could result. A reconnaissance-level biological survey will be conducted and a Biological Analysis Report will be prepared. Potential impacts to biological resources will be evaluated in the EIR.

# V. CULTURAL RESOURCES

| Would the project: | Potentially Significant Impact | Less than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5? | ☒ | ☐ | ☐ | ☐ |
| b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? | ☒ | ☐ | ☐ | ☐ |
| c. Disturb any human remains, including those interred outside of formal cemeteries? | ☒ | ☐ | ☐ | ☐ |

## RESPONSES

a. <u>Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?</u>

b. <u>Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?</u>

c. <u>Disturb any human remains, including those interred outside of formal cemeteries?</u>

**Potentially Significant Impact.** The site consists of 156 acres of agricultural land currently in crop production. Although the site has been actively farmed, it is unknown whether cultural resources are located on the proposed Project site and as such, this impact is considered ***potentially significant***. A cultural resources assessment will be conducted, and this impact area will be analyzed and discussed in the EIR.

# VI. ENERGY

| **Would the project:** | Potentially Significant Impact | Less than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation? | ☒ | ☐ | ☐ | ☐ |
| b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? | ☒ | ☐ | ☐ | ☐ |

## RESPONSES:

a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

**Potentially Significant Impact.** California's total energy consumption is second-highest in the nation, but, in 2018, the state's per capita energy consumption was the fourth lowest, due in part to its mild climate and its energy efficiency programs. In 2018, California ranked first in the nation as producer of electricity from solar, geothermal, and biomass resources and fourth in the nation in conventional hydroelectric power generation. Also in 2018, large- and small-scale solar PV and solar thermal installations provided about 19% of California's net electricity generation.[4]

[4] U.S. Energy Information Administration. Independent Statistics and Analysis. California Profile Overview. https://www.eia.gov/state/?sid=CA#tabs-1. Accessed June 2020.

Energy usage is typically quantified using the British thermal unit (BTU). As a point of reference, the approximate amounts of energy contained in common energy sources are as follows:

| Energy Source | BTUs[5] |
|---|---|
| Gasoline | 120,429 per gallon |
| Natural Gas | 1,037 per cubic foot |
| Electricity | 3,412 per kilowatt-hour |

California electrical consumption in 2018 was 7,966.6 trillion BTU[6], as provided in Table 3-1.

**Table 3-1**
**2018 California Energy Consumption[7]**

| End User | BTU of energy consumed (in trillions) | Percentage of total consumption |
|---|---|---|
| **Residential** | 1,439.2 | 18.1 |
| **Commercial** | 1,509.2 | 18.9 |
| **Industrial** | 1,848.2 | 23.2 |
| **Transportation** | 3,170 | 39.8 |
| **Total** | **7,966.6** | -- |

The proposed Project will contribute to the consumption of energy resources that could lead to ***potentially significant*** impacts in this issue area. Therefore, this topic will be analyzed in the EIR. Project-related energy impacts will be quantified to the extent feasible and it will be based in part on information from the Project traffic study and air quality reports.

[5] U.S. Energy Information Administration. Energy Units and Calculators Explained. https://www.eia.gov/energyexplained/index.php?page=about_energy_units. Accessed June 2020.
[6] U.S. Energy Information Administration. Independent Statistics and Analysis. California Profile Overview. https://www.eia.gov/state/?sid=CA#tabs-1. Accessed June 2020.
[7] Ibid.

# VII. GEOLOGY AND SOILS

| **Would the project:** | Potentially Significant Impact | Less than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: | | | | |
| i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. | ☒ | ☐ | ☐ | ☐ |
| ii. Strong seismic ground shaking? | ☒ | ☐ | ☐ | ☐ |
| iii. Seismic-related ground failure, including liquefaction? | ☒ | ☐ | ☐ | ☐ |
| iv. Landslides? | ☒ | ☐ | ☐ | ☐ |
| b. Result in substantial soil erosion or the loss of topsoil? | ☒ | ☐ | ☐ | ☐ |
| c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? | ☒ | ☐ | ☐ | ☐ |
| d. Be located on expansive soil, as defined in Table 18-1-B of the most recently | ☒ | ☐ | ☐ | ☐ |

| VII. GEOLOGY AND SOILS<br>**Would the project:** | Potentially Significant Impact | Less than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| adopted Uniform Building Code creating substantial direct or indirect risks to life or property? | | | | |
| e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water? | ☐ | ☐ | ☐ | ☒ |
| f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | ☐ | ☐ | ☒ | ☐ |

**RESPONSES:**

a-i. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

a-ii. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

a-iii. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

a-iv. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

b. Result in substantial soil erosion or the loss of topsoil?

c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

d. Be located on expansive soil, as defined in Table 18-1-B of the most recently adopted Uniform Building Code creating substantial risks to life or property?

**Potentially Significant Impact.** According to the City of Lemoore 2030 General Plan, there are no known active seismic faults in Kings County or its immediate vicinity[8] and the Project site is not located within a currently designated Earthquake Fault Zone (formerly Alquist-Priolo Earthquake Fault Zone).[9] Additionally, according to the Seismic Safety Map contained within the Health and Safety Element of the 2035 Kings County General Plan, the proposed Project site is located within an area designated as Zone V1 or Valley Zone 1, which is identified as the area of least expected seismic shaking by the Kings County Seismic Zone Description.[10] The nearest active fault is the Nunez fault located in western Fresno County. The absence of active seismic faults in the Project vicinity would preclude the risk of strong seismic ground shaking. In addition, new structures are required to adhere to current California Uniform Building Code standards, providing adequate design, construction and maintenance of structures to prevent exposure of people and structures to major geologic hazards.

As geologic site-specifics are unknown, the proposed Project could expose people or structures to potential geologic hazards that could lead to ***potentially significant*** impacts in this issue area. Project-related impacts will be analyzed in a site-specific geotechnical analysis and results will be presented in the EIR.

e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

**No Impact.** The Project does not include the construction, replacement, or disturbance of septic tanks or alternative wastewater disposal systems as the Project would connect to the City's existing sewer system.

Therefore, there is ***no impact.***

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[8] California Department of Conservation. CGS Information Warehouse: Regulatory Maps. http://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorymaps. Accessed June 2020.

[9] City of Lemoore 2030 General Plan. Safety and Noise Element. May 2008. https://lemoore.com/wp-content/uploads/2018/01/lemoore_gp_ch7_conserv_open_space_082208_v2.pdf. Page 8-2. Accessed June 2020.

[10] County of Kings 2035 General Plan. Health and Safety Element. https://www.countyofkings.com/home/showdocument?id=13515. Pages HS-7 and 8. Accessed June 2020.

**Mitigation Measures:** None are required.

f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

**Less Than Significant Impact.** There are no unique geological features or known fossil-bearing sediments in the vicinity of the proposed Project site. However, there remains the possibility for previously unknown, buried paleontological resources or unique geological sites to be uncovered during subsurface construction activities. Implementing Policy COS-I-33 of the City of Lemoore 2030 General Plan requires inadvertent discovery practices to be implemented should previously undiscovered paleontological resources be located.[11]

As such, impacts to undiscovered paleontological resources would be ***less than significant*** **and** further analysis is not warranted in the EIR.

**Mitigation Measures:** None are required.

[11] City of Lemoore 2030 General Plan. Conservation and Open Space Element. May 2008. https://lemoore.com/wp-content/uploads/2018/01/lemoore_gp_ch7_conserv_open_space_082208_v2.pdf. Page 7-33. Accessed June 2020.

## VIII. GREENHOUSE GAS EMISSIONS

| Would the project: | Potentially Significant Impact | Less than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? | ☒ | ☐ | ☐ | ☐ |
| b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? | ☒ | ☐ | ☐ | ☐ |

## RESPONSES

**Potentially Significant Impact.** Various gases in the earth's atmosphere play an important role in moderating the earth's surface temperature. Solar radiation enters earth's atmosphere from space and a portion of the radiation is absorbed by the earth's surface. The earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. GHGs are transparent to solar radiation, but are effective in absorbing infrared radiation. Consequently, radiation that would otherwise escape back into space is retained, resulting in a warming of the earth's atmosphere. This phenomenon is known as the greenhouse effect. Scientific research to date indicates that some of the observed climate change is a result of increased GHG emissions associated with human activity. Among the GHGs contributing to the greenhouse effect are water vapor, carbon dioxide ($CO_2$), methane ($CH_4$), ozone, Nitrous Oxide ($NO_x$), and chlorofluorocarbons. Human-caused emissions of these GHGs in excess of natural ambient concentrations are considered responsible for enhancing the greenhouse effect. GHG emissions contributing to global climate change are attributable, in large part, to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation. Global climate change is, indeed, a global issue. GHGs are global pollutants, unlike criteria pollutants and TACs (which are pollutants of regional and/or local concern). Global climate change, if it occurs, could potentially affect water resources in California. Rising temperatures could be anticipated to result in sea-level rise (as polar ice caps melt) and possibly change the timing and amount of precipitation, which could alter water quality. According to some, climate change could result in more extreme weather patterns; both heavier precipitation that could lead to flooding, as well as more extended drought periods. There is

uncertainty regarding the timing, magnitude, and nature of the potential changes to water resources as a result of climate change; however, several trends are evident.

Snowpack and snowmelt may also be affected by climate change. Much of California's precipitation falls as snow in the Sierra Nevada and southern Cascades, and snowpack represents approximately 35 percent of the state's useable annual water supply. The snowmelt typically occurs from April through July; it provides natural water flow to streams and reservoirs after the annual rainy season has ended. As air temperatures increase due to climate change, the water stored in California's snowpack could be affected by increasing temperatures resulting in: (1) decreased snowfall, and (2) earlier snowmelt.

The Project may contribute to increased GHGs and global climate change. Therefore, this impact is ***potentially significant*** and this topic will be addressed in the EIR. The EIR will include an Air Quality / Greenhouse Gas Analysis and will be the basis of the analysis discussed in the EIR.

# IX. HAZARDS AND HAZARDOUS MATERIALS

| **Would the project:** | Potentially Significant Impact | Less than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | ☐ | ☐ | ☒ | ☐ |
| b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | ☒ | ☐ | ☐ | ☐ |
| c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | ☐ | ☐ | ☒ | ☐ |
| d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? | ☐ | ☐ | ☒ | ☐ |
| e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area? | ☒ | ☐ | ☐ | ☐ |
| f. Impair implementation of or physically interfere with an adopted emergency | ☐ | ☐ | ☒ | ☐ |

# IX. HAZARDS AND HAZARDOUS MATERIALS

| **Would the project:** | Potentially Significant Impact | Less than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| response plan or emergency evacuation plan? | | | | |
| g. Expose people or structures either directly or indirectly to a significant risk of loss, injury or death involving wildland fires? | ☐ | ☐ | ☒ | ☐ |

## RESPONSES

a. <u>Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?</u>

**Less Than Significant Impact.** This impact is associated with hazards caused by the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

*Construction*

Proposed Project construction activities may involve the use and transport of hazardous materials. These materials may include fuels, oils, mechanical fluids, and other chemicals used during construction. Transportation, storage, use, and disposal of hazardous materials during construction activities would be required to comply with applicable federal, state, and local statutes and regulations. Compliance would ensure that human health and the environment are not exposed to hazardous materials. In addition, the Project would be required to comply with the National Pollutant Discharge Elimination System (NPDES) permit program through the submission and implementation of a Stormwater Pollution Prevention Plan during construction activities to prevent contaminated runoff from leaving the Project site. Therefore, no significant impacts would occur during construction activities.

*Operation*

The operational phase of the proposed Project would occur after construction is completed and residents move in to occupy the structures on a day-to-day basis. The proposed Project includes land uses that are considered compatible with the surrounding uses, including single and multi-family residential uses, open space and natural drainage areas. None of these land uses routinely transport, use, or dispose of

hazardous materials, or present a reasonably foreseeable release of hazardous materials, with the exception of common residential grade hazardous materials such as cleaners, paint, petroleum products, etc. The proposed Project would not create a significant hazard through the routine transport, use, or disposal of hazardous materials, nor would a significant hazard to the public or to the environment through the reasonably foreseeable upset and accidental conditions involving the likely release of hazardous materials into the environment occur.

Compliance with all federal, State and local regulations, and the City of Lemoore 2030 General Plan Implementing Policies SN-I-18 through SN-I-21 in the Safety and Noise Element would ensure that the Project would not cause an adverse effect on the environment with respect to the use, storage, or disposal of general household and commercial hazardous substances generated from future development or uses.

Therefore, the proposed Project will not create a significant hazard to the public or the environment and any impacts would be ***less than significant*** and further analysis of this issue is not warranted in the EIR.

**Mitigation Measures:** None are required.

b. <u>Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?</u>

**Potentially Significant Impact.** The Project site has been under cultivation for a number of years. There is a potential for concentrations of organo-chlorine pesticides (OCPs) 4,4'-DDT, chlordane and dieldrin or other chemicals to occur in the soil. Ground disturbance activities have the potential to release dust, which may be contaminated with these substances and pose a potential threat to construction workers and nearby residences. A Phase 1 Environmental Site Assessment of the Project will be prepared for the Project. Impacts may be ***significant*** and will be analyzed further in the EIR.

c. <u>Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?</u>

**Less Than Significant Impact.** Meadow Lane Elementary School is within ¼ mile of the proposed Project site. Based on the proposed Project description of a residential development, it is not reasonably foreseeable that the proposed Project will cause a significant impact by emitting hazardous waste or bringing hazardous materials within one-quarter mile of an existing or proposed school. Residential developments typically do not generate, store, or dispose of significant quantities of hazardous materials.

Such uses also do not normally involve dangerous activities that could expose persons onsite or in the surrounding areas to large quantities of hazardous materials. See the responses to a) and b) above regarding hazardous material handling. Any impacts would be ***less than significant*** and further analysis of this issue is not warranted in the EIR.

**Mitigation Measures:** None are required.

d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

**Less Than Significant Impact.** The proposed Project site is not located on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (Geotracker[12] and DTSC Envirostor[13] databases). The nearest Department of Toxic Substances Control listed site is the Gateway Plaza Cleanup Site (Geotracker identified the hazardous substance at this location as "Dichloroethene"). The site address is 1104-1290 North Lemoore Avenue and is approximately one-half mile south of the Project site. The site is listed as Open – Site Assessment as of 2/5/2016. There are no hazardous materials sites that impact the Project and therefore there is ***a less than significant impact*** and further analysis is not warranted in the EIR

**Mitigation Measures:** None are required.

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

**Potentially Significant Impact.** There are no public airports located within two miles of the proposed Project site. The nearest public airport is the Hanford Municipal Airport, located approximately eight miles to the east. The Lemoore NAS Boundary is approximately nine miles to the west of the Project site. While the proposed Project is located outside of the 3-mile buffer boundary of Lemoore NAS, should it

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[12] California State Water Resources Control Board GeoTracker. https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=tehachapi%2C+ca. Accessed June 2020.
[13] California Department of Toxic Substances Control.Envirostor. https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=Lemoore+california. Accessed June 2020.

be in non-conformance with the 2011 Joint Land Use Study, ***potential significant impacts*** could occur. Proposed Project compliance with the 2011 Joint Land Use study will be discussed in the EIR.

**Mitigation Measures:** None are required.

f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

**Less Than Significant Impact.** The City of Lemoore's Emergency Operations Plan (EOP) provides guidance to City staff in the event of extraordinary emergency situation associated with natural disaster and technological incidents. The EOP concentrates on operation concepts and response procedures relative to large-scale disasters. In the event of a county-wide disaster, the City is to assume its role assigned in the Kings County EOP.[14] The proposed Project would also comply with the appropriate local and State requirements regarding emergency response plans and access. The Project would not inhibit the ability of local roadways to continue to accommodate emergency response and evacuation activities and as such, the Project would not interfere with the City's adopted emergency response plan. Any impacts are ***less than significant*** and further analysis is not warranted in the EIR

**Mitigation Measures:** None are required.

g. Expose people or structures either directly or indirectly to a significant risk of loss, injury or death involving wildland fires?

**Less Than Significant Impact.** Wildfire hazard data for the City of Lemoore is provided by the California Department of Forestry and Fire Protection. The majority of the City is considered to have either little or no threat or a moderate threat of wildfire.[15] According to the City of Lemoore 2030 General Plan Hazards and Safety Services Figure 8-2[16], the proposed Project nor its vicinity have a high wildfire threat. There are no other factors of the proposed Project or the surrounding area that would exacerbate wildfire or the uncontrolled spread of a wildfire.

[14] City of Lemoore 2030 General Plan. Safety and Noise Element. May 2008. https://lemoore.com/wp-content/uploads/2018/01/lemoore_gp_ch8_safety_noise_3_20_2012.pdf. Page 8-13. Accessed June 2020.
[15] Ibid. Page 8-7.
[16] Ibid. Page 8-2.

For these reasons, the impact is considered ***less than significant*** and further analysis is not warranted in the EIR

**Mitigation Measures:** None are required.

# X. HYDROLOGY AND WATER QUALITY

| **Would the project:** | Potentially Significant Impact | Less than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? | ☒ | ☐ | ☐ | ☐ |
| b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? | ☒ | ☐ | ☐ | ☐ |
| c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: | ☒ | ☐ | ☐ | ☐ |
| i. Result in substantial erosion or siltation on- or off- site; | ☒ | ☐ | ☐ | ☐ |
| ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; | ☒ | ☐ | ☐ | ☐ |
| iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or | ☒ | ☐ | ☐ | ☐ |
| iv. impede or redirect flood flows? | ☒ | ☐ | ☐ | ☐ |

# X. HYDROLOGY AND WATER QUALITY

**Would the project:**

| | Potentially Significant Impact | Less than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? | ☒ | ☐ | ☐ | ☐ |
| e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? | ☒ | ☐ | ☐ | ☐ |

## RESPONSES

a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i. Result in substantial erosion or siltation on- or off- site;

ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

**Potentially Significant Impact.** The proposed Project is located on a relatively flat site currently in agricultural production. The City currently utilizes local groundwater as its sole source of municipal water supply. The City's municipal water system extracts its water supply from underground aquifers via groundwater wells within the City. One of which is immediately south of the proposed Project site. The water is treated and stored in above-ground tanks for distribution. The Project will be required to connect to the City's existing water system.

The Project will require potable water and will modify the existing natural drainage on site. A Water Supply Assessment (WSA) for the Project will be prepared in accordance with Senate Bill 610. In addition, water quality impacts from the Project will be assessed. It has been determined that these impacts are ***potentially significant*** and therefore these topics will be addressed in the EIR.

# XI. LAND USE AND PLANNING

| **Would the project:** | Potentially Significant Impact | Less than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Physically divide an established community? | ☐ | ☐ | ☒ | ☐ |
| b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? | ☒ | ☐ | ☐ | ☐ |

## RESPONSES

a. Physically divide an established community?

**Less than Significant Impact** The proposed Project site is located in an area that is dominated by farmland and scattered rural residential housing to the north, east and west, and residential development to the south. The Project would not divide or physically impact the established community but would provide a variety of housing opportunities with a range of densities, styles, sizes and values that will be designed to satisfy existing and future demand for quality housing in the area. The Project will also provide local vehicular and pedestrian access points from the Project site to existing urban development to the south. Additionally, this development assists the City in meeting its General Plan and Housing Element requirements and objectives.

For these reasons, the impact is considered ***less than significant*** and further analysis is not warranted in the EIR.

b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

**Potentially Significant Impact.** The proposed Project site is located immediately north of the City of Lemoore limits, in Kings County. The southern third of the proposed Project site is within the adopted Sphere of Influence for Lemoore. The proposed Project will result in the construction of up to 825 residential units at full buildout. According to the Kings County 2016-2024 Housing Element, the average household size for owner-occupied housing units in Lemoore is 3.14 persons per unit and the average

household size for renter-occupied housing units is 2.83 persons per unit.[17] Using these figures, the Project could potentially result in an additional 2,295 to 2,527 residents (depending on final buildout configuration).

Because of the relatively large size of the Project, this is a ***potentially significant*** impact. The EIR will analyze the Project's consistency with the City's General Plan, Zoning Ordinance, and other land use plans (as applicable).

[17] Kings County 2016-2024 Housing Element, Table 2-18, page 2-19.

# XI. MINERAL RESOURCES

| **Would the project:** | Potentially Significant Impact | Less than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | ☐ | ☐ | ☐ | ☒ |
| b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? | ☐ | ☐ | ☐ | ☒ |

## RESPONSES

a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

**No Impact.** There are no mapped mineral resources in the City of Lemoore, and no regulated mine facilities as of July, 2007.[18] The City is outside an identified California Geologic Energy Management (CalGEM, formerly the Division of Oil, Gas and Geothermal Resources) oil or gas field jurisdictional boundary[19].

As such, there are ***no impacts*** and further analysis is not warranted in the EIR**.**

**Mitigation Measures:** None are required.

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[18] City of Lemoore 2030 General Plan. Conservation and Open Space Element. May 2008. https://lemoore.com/wp-content/uploads/2018/01/lemoore_gp_ch7_conserv_open_space_082208_v2.pdf. Page 7-9. Accessed June 2020.

[19] CalGEM GIS Well Finder. https://maps.conservation.ca.gov/doggr/wellfinder/#openModal/-119.52112/36.39028/12 Accessed July 2020.

# XII. NOISE

| **Would the project:** | Potentially Significant Impact | Less than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | ☒ | ☐ | ☐ | ☐ |
| b. Generation of excessive groundborne vibration or groundborne noise levels? | ☒ | ☐ | ☐ | ☐ |
| c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? | ☒ | ☐ | ☐ | ☐ |

## RESPONSES

**Potentially Significant Impact.** The proposed Project site is located in a primarily agricultural area with residential development immediately south. The proposed Project may result in significant increases in both temporary as well as permanent noise and/or vibration. A Noise Assessment Report will be prepared that will consider traffic patterns in and around the Project and will utilize the noise exposure criteria developed in the City of Lemoore 2030 General Plan. Therefore, this impact is ***potentially significant,*** and this topic will be addressed in the EIR.

# XIV. POPULATION AND HOUSING

| **Would the project:** | Potentially Significant Impact | Less than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | ☒ | ☐ | ☐ | ☐ |
| b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? | ☐ | ☐ | ☐ | ☒ |

## RESPONSES

a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure?

**Potentially Significant Impact.** The proposed Project includes the construction of up to 825 residential units. According to the Kings County 2016-2024 Housing Element, the average household size for owner-occupied housing units in Lemoore is 3.14 persons per unit and the average household size for renter-occupied housing units is 2.83 persons per unit.[20] Using these figures, the Project could potentially result in an additional 2,295 to 2,527 residents (depending on final buildout configuration).

Because of the relative size of the Project, an assessment of population projections, the potential for substantial population growth and its impact on the City will be addressed in the EIR. This impact is ***potentially significant*** .

[20] Kings County 2016-2024 Housing Element, Table 2-18, page 2-19.

b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

**No Impact.** As shown in Figure 3 – Site Aerial, (see Chapter Two – Project Description), the proposed Project will be located on undeveloped agricultural land with no housing. Since there are no people living on the site or existing housing on the site, none will be displaced and there is no necessity to construct replacement housing elsewhere. Therefore, there is ***no impact*** and further analysis of this issue is not warranted in the EIR.

**Mitigation Measures:** None are required.

# XV. PUBLIC SERVICES

| Would the project: | Potentially Significant Impact | Less than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: | | | | |
| Fire protection? | ☒ | ☐ | ☐ | ☐ |
| Police protection? | ☒ | ☐ | ☐ | ☐ |
| Schools? | ☒ | ☐ | ☐ | ☐ |
| Parks? | ☒ | ☐ | ☐ | ☐ |
| Other public facilities? | ☒ | ☐ | ☐ | ☐ |

## RESPONSES

**Potentially Significant Impact.** The Project will increase the demand for fire and police protection services and could cause potentially significant increased demand on schools, parks and other facilities. Therefore, this impact is ***potentially significant*** and this topic will be addressed in the EIR. The EIR analysis will include information pertaining to existing staffing levels, ability to serve the Project, and any potential measures required to reduce Project impacts to public services.

# XVI. RECREATION

| **Would the project:** | Potentially Significant Impact | Less than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | ☐ | ☐ | ☒ | ☐ |
| b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? | ☐ | ☐ | ☒ | ☐ |

## RESPONSES

a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

**Less Than Significant Impact.** Currently, the City of Lemoore Parks and Recreation Department maintains approximately 88 acres of parkland, excluding the City-owned municipal golf course. The City's current park standard for public parkland is five acres of parkland per 1,000 residents. With a population of 25,585 residents in 2015, the City currently maintains that standard.

The proposed Project includes four parks for a total of 7.98 acres and 1.64 acres of trail area. Since the Project does not include enough parkland to maintain the current park standard, the Project developer will also be required to pay in lieu fees, in compliance with the goals, policies, and implementation measures of the General Plan and Lemoore City Municipal Code Title 9, Chapter 7, Article N. Therefore, the proposed Project would not increase the use of existing parks or the need to construct or expand existing recreational facilities. Impacts are ***less than significant*** and further analysis of this issue is not warranted in the EIR.

**Mitigation Measures:** None are required.

# XVII. TRANSPORTATION/ TRAFFIC

| **Would the project:** | Potentially Significant Impact | Less than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? | ☒ | ☐ | ☐ | ☐ |
| b. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)? | ☒ | ☐ | ☐ | ☐ |
| c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | ☒ | ☐ | ☐ | ☐ |
| d. Result in inadequate emergency access? | ☒ | ☐ | ☐ | ☐ |

**Potentially Significant Impact.** The proposed Project site is located immediately north of the City and is surrounded to the north, east and west by active agriculture. The southern site boundary is developed with residential uses. The trip generation rates for the proposed Project were obtained from the 10th Edition of the Trip Generation Manual published by the Institute of Transportation Engineers. At buildout, the proposed Project is estimated to generate a maximum of 7,362 daily trips, 554 AM peak hour trips and 730 PM peak hour trips.

The proposed Project may result in substantial increases in traffic in and around the Project area. The Project is located at the northern edge of the City and may increase the vehicle miles traveled by future residents to shopping, government services and employment opportunities. Therefore, this impact is ***potentially significant*** and this topic will be addressed in the EIR. The EIR will include a Traffic Impact Study to assist in evaluation of this environmental topic.

# XVIII. TRIBAL CULTURAL RESOURCES

| Would the project: | Potentially Significant Impact | Less than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: | | | | |
| i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or | ☒ | ☐ | ☐ | ☐ |
| ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. | ☒ | ☐ | ☐ | ☐ |

## RESPONSES

a). Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

**Potentially Significant Impact.** The site consists of 156 acres of agricultural land currently in production with alfalfa. Although the site has been actively farmed, it is unknown whether tribal resources are located on the proposed Project site and as such, this impact is considered ***potentially significant***. A cultural and tribal evaluation will be conducted, and this impact area will be analyzed and discussed in the EIR.

# XIX. UTILITIES AND SERVICE SYSTEMS

| **Would the project:** | Potentially Significant Impact | Less than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? | ☒ | ☐ | ☐ | ☐ |
| b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? | ☒ | ☐ | ☐ | ☐ |
| c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | ☒ | ☐ | ☐ | ☐ |
| d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? | ☒ | ☐ | ☐ | ☐ |
| e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste? | ☒ | ☐ | ☐ | ☐ |

## RESPONSES

a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

**Potentially Significant Impact.** The proposed Project will generate solid waste and wastewater and will require water supply and infrastructure to serve the residents housed in the development. It has been determined that these impacts are ***potentially significant*** and therefore these topics will be addressed in the EIR. The analysis will include quantification of Project-related water, wastewater and solid waste impacts.

# XX. WILDFIRE

| **If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:** | Potentially Significant Impact | Less than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| a. Substantially impair an adopted emergency response plan or emergency evacuation plan? | ☐ | ☐ | ☒ | ☐ |
| b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? | ☐ | ☐ | ☒ | ☐ |
| c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment? | ☐ | ☐ | ☒ | ☐ |
| d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes? | ☐ | ☐ | ☒ | ☐ |

## RESPONSES

a. Substantially impair an adopted emergency response plan or emergency evacuation plan?

**Less than Significant Impact.** The Project will be designed for adequate emergency access and will be reviewed by the City prior to final design. Emergency access will be maintained at all times both during construction and operation. Therefore, the Project will not impair or physically interfere with an adopted emergency response plan or emergency evacuation plan. Any impacts are ***less than significant*** and further analysis is not warranted in the EIR.

**Mitigation Measures:** None are required.

b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

**Less Than Significant Impact.** Wildfire hazard data for the City of Lemoore is provided by the California Department of Forestry and Fire Protection. The majority of the City is considered to have either little or no threat or a moderate threat of wildfire.[21] According to the City of Lemoore 2030 General Plan Hazards and Safety Services Figure 8-2[22], the proposed Project nor its vicinity have a high wildfire threat. There are no other factors of the proposed Project or the surrounding area that would exacerbate wildfire or the uncontrolled spread of a wildfire.

The proposed Project would require the installation or maintenance of additional distribution lines to connect the residences to the existing utility grid; however, the Project would be constructed in accordance with all local and State regulations regarding power lines and other related infrastructure, as well as fire suppression requirements.

The proposed Project site is flat, with no topographic relief, which precludes post-fire slope instability. The Project site is not located near the ocean or a steep topographic feature. Additionally, there is no body of water within the Project vicinity.

The proposed Project will not expose people or structures to risks of flooding, landslides, runoff, slope instability, drainage changes; or exacerbate wildfire risks. Impacts are ***less than significant*** and further analysis is not warranted in the EIR.

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[21] City of Lemoore 2030 General Plan. Safety and Noise Element. May 2008. https://lemoore.com/wp-content/uploads/2018/01/lemoore_gp_ch8_safety_noise_3_20_2012.pdf. Page 8-7. Accessed June 2020.
[22] City of Lemoore 2030 General Plan. Safety and Nosie Element. May 2008. https://lemoore.com/wp-content/uploads/2018/01/lemoore_multi_hazards.pdf. Figure 8-2. Accessed June 2020.

**Mitigation Measures:** None are required.

# Chapter 4

# PREPARERS & REFERENCES

# LIST OF PREPARERS

## List of Preparers

**Crawford & Bowen Planning, Inc.**

- Travis Crawford, AICP, Principal Environmental Planner
- Emily Bowen, LEED AP, Principal Environmental Planner

## Persons and Agencies Consulted

**City of Lemoore**

Pacific Gas and Electric Company

**Plan Review Team**
Land Management

PGEPlanReview@pge.com

*6111 Bollinger Canyon Road 3370A*
San Ramon, CA 94583

August 31, 2020

Judy Holwell
City of Lemoore
711 W Cinnamon Dr
Lemoore, CA 93245

Ref: Gas and Electric Transmission and Distribution

Dear Judy Holwell,

Thank you for submitting the Lacey Ranch Area Master Plans for our review. PG&E will review the submitted plans in relationship to any existing Gas and Electric facilities within the project area. If the proposed project is adjacent/or within PG&E owned property and/or easements, we will be working with you to ensure compatible uses and activities near our facilities.

Attached you will find information and requirements as it relates to Gas facilities (Attachment 1) and Electric facilities (Attachment 2). Please review these in detail, as it is critical to ensure your safety and to protect PG&E's facilities and its existing rights.

Below is additional information for your review:

1. This plan review process does not replace the application process for PG&E gas or electric service your project may require. For these requests, please continue to work with PG&E Service Planning: https://www.pge.com/en_US/business/services/building-and-renovation/overview/overview.page.

2. If the project being submitted is part of a larger project, please include the entire scope of your project, and not just a portion of it. PG&E's facilities are to be incorporated within any CEQA document. PG&E needs to verify that the CEQA document will identify any required future PG&E services.

3. An engineering deposit may be required to review plans for a project depending on the size, scope, and location of the project and as it relates to any rearrangement or new installation of PG&E facilities.

Any proposed uses within the PG&E fee strip and/or easement, may include a California Public Utility Commission (CPUC) Section 851 filing. This requires the CPUC to render approval for a conveyance of rights for specific uses on PG&E's fee strip or easement. PG&E will advise if the necessity to incorporate a CPUC Section 851filing is required.

This letter does not constitute PG&E's consent to use any portion of its easement for any purpose not previously conveyed. PG&E will provide a project specific response as required.

Sincerely,

Plan Review Team
Land Management

## Attachment 1 – Gas Facilities

There could be gas transmission pipelines in this area which would be considered critical facilities for PG&E and a high priority subsurface installation under California law. Care must be taken to ensure safety and accessibility. So, please ensure that if PG&E approves work near gas transmission pipelines it is done in adherence with the below stipulations. Additionally, the following link provides additional information regarding legal requirements under California excavation laws: https://www.usanorth811.org/images/pdfs/CA-LAW-2018.pdf

1. Standby Inspection: A PG&E Gas Transmission Standby Inspector must be present during any demolition or construction activity that comes within 10 feet of the gas pipeline. This includes all grading, trenching, substructure depth verifications (potholes), asphalt or concrete demolition/removal, removal of trees, signs, light poles, etc. This inspection can be coordinated through the Underground Service Alert (USA) service at 811. A minimum notice of 48 hours is required. Ensure the USA markings and notifications are maintained throughout the duration of your work.

2. Access: At any time, PG&E may need to access, excavate, and perform work on the gas pipeline. Any construction equipment, materials, or spoils may need to be removed upon notice. Any temporary construction fencing installed within PG&E's easement would also need to be capable of being removed at any time upon notice. Any plans to cut temporary slopes exceeding a 1:4 grade within 10 feet of a gas transmission pipeline need to be approved by PG&E Pipeline Services in writing PRIOR to performing the work.

3. Wheel Loads: To prevent damage to the buried gas pipeline, there are weight limits that must be enforced whenever any equipment gets within 10 feet of traversing the pipe.

Ensure a list of the axle weights of all equipment being used is available for PG&E's Standby Inspector. To confirm the depth of cover, the pipeline may need to be potholed by hand in a few areas.

Due to the complex variability of tracked equipment, vibratory compaction equipment, and cranes, PG&E must evaluate those items on a case-by-case basis prior to use over the gas pipeline (provide a list of any proposed equipment of this type noting model numbers and specific attachments).

No equipment may be set up over the gas pipeline while operating. Ensure crane outriggers are at least 10 feet from the centerline of the gas pipeline. Transport trucks must not be parked over the gas pipeline while being loaded or unloaded.

4. Grading: PG&E requires a minimum of 36 inches of cover over gas pipelines (or existing grade if less) and a maximum of 7 feet of cover at all locations. The graded surface cannot exceed a cross slope of 1:4.

5. Excavating: Any digging within 2 feet of a gas pipeline must be dug by hand. Note that while the minimum clearance is only 12 inches, any excavation work within 24 inches of the edge of a pipeline must be done with hand tools. So to avoid having to dig a trench entirely with hand tools, the edge of the trench must be over 24 inches away. (Doing the math for a 24 inch

wide trench being dug along a 36 inch pipeline, the centerline of the trench would need to be at least 54 inches [24/2 + 24 + 36/2 = 54] away, or be entirely dug by hand.)

Water jetting to assist vacuum excavating must be limited to 1000 psig and directed at a 40° angle to the pipe. All pile driving must be kept a minimum of 3 feet away.

Any plans to expose and support a PG&E gas transmission pipeline across an open excavation need to be approved by PG&E Pipeline Services in writing PRIOR to performing the work.

6. Boring/Trenchless Installations: PG&E Pipeline Services must review and approve all plans to bore across or parallel to (within 10 feet) a gas transmission pipeline. There are stringent criteria to pothole the gas transmission facility at regular intervals for all parallel bore installations.

For bore paths that cross gas transmission pipelines perpendicularly, the pipeline must be potholed a minimum of 2 feet in the horizontal direction of the bore path and a minimum of 12 inches in the vertical direction from the bottom of the pipe with minimum clearances measured from the edge of the pipe in both directions. Standby personnel must watch the locator trace (and every ream pass) the path of the bore as it approaches the pipeline and visually monitor the pothole (with the exposed transmission pipe) as the bore traverses the pipeline to ensure adequate clearance with the pipeline. The pothole width must account for the inaccuracy of the locating equipment.

7. Substructures: All utility crossings of a gas pipeline should be made as close to perpendicular as feasible (90° +/- 15°). All utility lines crossing the gas pipeline must have a minimum of 12 inches of separation from the gas pipeline. Parallel utilities, pole bases, water line 'kicker blocks', storm drain inlets, water meters, valves, back pressure devices or other utility substructures are not allowed in the PG&E gas pipeline easement.

If previously retired PG&E facilities are in conflict with proposed substructures, PG&E must verify they are safe prior to removal. This includes verification testing of the contents of the facilities, as well as environmental testing of the coating and internal surfaces. Timelines for PG&E completion of this verification will vary depending on the type and location of facilities in conflict.

8. Structures: No structures are to be built within the PG&E gas pipeline easement. This includes buildings, retaining walls, fences, decks, patios, carports, septic tanks, storage sheds, tanks, loading ramps, or any structure that could limit PG&E's ability to access its facilities.

9. Fencing: Permanent fencing is not allowed within PG&E easements except for perpendicular crossings which must include a 16 foot wide gate for vehicular access. Gates will be secured with PG&E corporation locks.

10. Landscaping: Landscaping must be designed to allow PG&E to access the pipeline for maintenance and not interfere with pipeline coatings or other cathodic protection systems. No trees, shrubs, brush, vines, and other vegetation may be planted within the easement area. Only those plants, ground covers, grasses, flowers, and low-growing plants that grow unsupported to a maximum of four feet (4') in height at maturity may be planted within the easement area.

11. Cathodic Protection: PG&E pipelines are protected from corrosion with an “Impressed Current” cathodic protection system. Any proposed facilities, such as metal conduit, pipes, service lines, ground rods, anodes, wires, etc. that might affect the pipeline cathodic protection system must be reviewed and approved by PG&E Corrosion Engineering.

12. Pipeline Marker Signs: PG&E needs to maintain pipeline marker signs for gas transmission pipelines in order to ensure public awareness of the presence of the pipelines. With prior written approval from PG&E Pipeline Services, an existing PG&E pipeline marker sign that is in direct conflict with proposed developments may be temporarily relocated to accommodate construction work. The pipeline marker must be moved back once construction is complete.

13. PG&E is also the provider of distribution facilities throughout many of the areas within the state of California. Therefore, any plans that impact PG&E’s facilities must be reviewed and approved by PG&E to ensure that no impact occurs which may endanger the safe operation of its facilities.

## Attachment 2 – Electric Facilities

It is PG&E's policy to permit certain uses on a case by case basis within its electric transmission fee strip(s) and/or easement(s) provided such uses and manner in which they are exercised, will not interfere with PG&E's rights or endanger its facilities. Some examples/restrictions are as follows:

1. Buildings and Other Structures: No buildings or other structures including the foot print and eave of any buildings, swimming pools, wells or similar structures will be permitted within fee strip(s) and/or easement(s) areas. PG&E's transmission easement shall be designated on subdivision/parcel maps as "**RESTRICTED USE AREA – NO BUILDING.**"

2. Grading: Cuts, trenches or excavations may not be made within 25 feet of our towers. Developers must submit grading plans and site development plans (including geotechnical reports if applicable), signed and dated, for PG&E's review. PG&E engineers must review grade changes in the vicinity of our towers. No fills will be allowed which would impair ground-to-conductor clearances. Towers shall not be left on mounds without adequate road access to base of tower or structure.

3. Fences: Walls, fences, and other structures must be installed at locations that do not affect the safe operation of PG&'s facilities. Heavy equipment access to our facilities must be maintained at all times. Metal fences are to be grounded to PG&E specifications. No wall, fence or other like structure is to be installed within 10 feet of tower footings and unrestricted access must be maintained from a tower structure to the nearest street. Walls, fences and other structures proposed along or within the fee strip(s) and/or easement(s) will require PG&E review; submit plans to PG&E Centralized Review Team for review and comment.

4. Landscaping: Vegetation may be allowed; subject to review of plans. On overhead electric transmission fee strip(s) and/or easement(s), trees and shrubs are limited to those varieties that do not exceed 15 feet in height at maturity. PG&E must have access to its facilities at all times, including access by heavy equipment. No planting is to occur within the footprint of the tower legs. Greenbelts are encouraged.

5. Reservoirs, Sumps, Drainage Basins, and Ponds: Prohibited within PG&E's fee strip(s) and/or easement(s) for electric transmission lines.

6. Automobile Parking: Short term parking of movable passenger vehicles and light trucks (pickups, vans, etc.) is allowed. The lighting within these parking areas will need to be reviewed by PG&E; approval will be on a case by case basis. Heavy equipment access to PG&E facilities is to be maintained at all times. Parking is to clear PG&E structures by at least 10 feet. Protection of PG&E facilities from vehicular traffic is to be provided at developer's expense AND to PG&E specifications. Blocked-up vehicles are not allowed. Carports, canopies, or awnings are not allowed.

7. Storage of Flammable, Explosive or Corrosive Materials: There shall be no storage of fuel or combustibles and no fueling of vehicles within PG&E's easement. No trash bins or incinerators are allowed.

8. Streets and Roads: Access to facilities must be maintained at all times. Street lights may be allowed in the fee strip(s) and/or easement(s) but in all cases must be reviewed by PG&E for proper clearance. Roads and utilities should cross the transmission easement as nearly at right angles as possible. Road intersections will not be allowed within the transmission easement.

9. Pipelines: Pipelines may be allowed provided crossings are held to a minimum and to be as nearly perpendicular as possible. Pipelines within 25 feet of PG&E structures require review by PG&E. Sprinklers systems may be allowed; subject to review. Leach fields and septic tanks are not allowed. Construction plans must be submitted to PG&E for review and approval prior to the commencement of any construction.

10. Signs: Signs are not allowed except in rare cases subject to individual review by PG&E.

11. Recreation Areas: Playgrounds, parks, tennis courts, basketball courts, barbecue and light trucks (pickups, vans, etc.) may be allowed; subject to review of plans. Heavy equipment access to PG&E facilities is to be maintained at all times. Parking is to clear PG&E structures by at least 10 feet. Protection of PG&E facilities from vehicular traffic is to be provided at developer's expense AND to PG&E specifications.

12. Construction Activity: Since construction activity will take place near PG&E's overhead electric lines, please be advised it is the contractor's responsibility to be aware of, and observe the minimum clearances for both workers and equipment operating near high voltage electric lines set out in the High-Voltage Electrical Safety Orders of the California Division of Industrial Safety (https://www.dir.ca.gov/Title8/sb5g2.html), as well as any other safety regulations. Contractors shall comply with California Public Utilities Commission General Order 95 (http://www.cpuc.ca.gov/gos/GO95/go_95_startup_page.html) and all other safety rules. No construction may occur within 25 feet of PG&E's towers. All excavation activities may only commence after 811 protocols has been followed.

Contractor shall ensure the protection of PG&E's towers and poles from vehicular damage by (installing protective barriers) Plans for protection barriers must be approved by PG&E prior to construction.

13. PG&E is also the owner of distribution facilities throughout many of the areas within the state of California. Therefore, any plans that impact PG&E's facilities must be reviewed and approved by PG&E to ensure that no impact occurs that may endanger the safe and reliable operation of its facilities.

California
**Department of Conservation**
Geologic Energy Management Division

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08/27/2020

City of Lemoore, Community Development (11428)
Judy Holdwell
711 W. Cinnamon Drive, Lemoore, CA 93245, CA 93245, USA
planning@lemoore.com

Construction Site Well Review (CSWR) ID: 1012054

Assessor Parcel Number(s): 021030057000

Property Owner(s): Judy Holdwell

Project Location Address: North of the City of Lemoore, Lemoore, California, 93245

Project Title: Lacey Ranch Area Master Plan Project - SCH # 2020080314

Public Resources Code (PRC) § 3208.1 establishes well reabandonment responsibility when a previously plugged and abandoned well will be impacted by planned property development or construction activities. Local permitting agencies, property owners, and/or developers should be aware of, and fully understand, that significant and potentially dangerous issues may be associated with development near oil, gas, and geothermal wells.

The Division of Oil, Gas, and Geothermal Resources (Division) has received and reviewed the above referenced project dated 8/20/2020. To assist local permitting agencies, property owners, and developers in making wise land use decisions regarding potential development near oil, gas, or geothermal wells, the Division provides the following well evaluation.

The project is located in Kings County, within the boundaries of the following fields:

Any Field

In addition to the plugged & abandoned well, there might be pipelines associated to oil and gas production.

Our records indicate there are 1 known oil or gas wells located within the project boundary as identified in the application.

- Number of wells Not Abandoned to Current Division Requirements as Prescribed by Law and Projected to Be Built Over or Have Future Access Impeded by this project: 1
- Number of wells Not Abandoned to Current Division Requirements as Prescribed by Law and Not Projected to Be Built Over or Have Future Access Impeded by this project: 0
- Number of wells Abandoned to Current Division Requirements as Prescribed by Law and Projected to Be Built Over or Have Future Access Impeded by this project: 0
- Number of wells Abandoned to Current Division Requirements as Prescribed by Law and

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Not Projected to Be Built Over or Have Future Access Impeded by this project: 0

The Division categorically advices against building over, or in any way impeding access to, oil, gas, or geothermal wells. Impeding access to a well could result in the need to remove any structure or obstacle that prevents or impedes access including, but not limited to, buildings, housing, fencing, landscaping, trees, pools, patios, sidewalks, roadways, and decking. Maintaining sufficient access is considered the ability for a well servicing unit and associated necessary equipment to reach a well from a public street or access way, solely over the parcel on which the well is located. A well servicing unit, and any necessary equipment, should be able to pass unimpeded along and over the route, and should be able to access the well without disturbing the integrity of surrounding infrastructure.

There are no guarantees a well abandoned in compliance with current Division requirements as prescribed by law will not start leaking in the future. It always remains a possibility that any well may start to leak oil, gas, and/or water after abandonment, no matter how thoroughly the well was plugged and abandoned. The Division acknowledges wells plugged and abandoned to the most current Division requirements as prescribed by law have a lower probability of leaking in the future, however there is no guarantees that such abandonments will not leak.

The Division advises that all wells identified on the development parcel prior to, or during, development activities be tested for liquid and gas leakage. Surveyed locations should be provided to the Division in Latitude and Longitude, NAD 83 decimal format. The Division expects any wells found leaking to be reported to it immediately.

Failure to plug and reabandon the well may result in enforcement action, including an order to perform reabandonment well work, pursuant to PRC § 3208.1, and 3224.

PRC § 3208.1 give the Division the authority to order or permit the re-abandonment of any well where it has reason to question the integrity of the previous abandonment, or if the well is not accessible or visible. Responsibility for re-abandonment costs may be affected by the choices made by the local permitting agency, property owner, and/or developer in considering the general advice set forth in this letter. The PRC continues to define the person or entity responsible for reabandonment as:

1. The property owner - If the well was plugged and abandoned in conformance with Division requirements at the time of abandonment, and in its current condition does not pose an immediate danger to life, health, and property, but requires additional work solely because the owner of the property on which the well is located proposes construction on the property that would prevent or impede access to the well for purposes of remedying a currently perceived future problem, then the owner of the property on which the well is located shall obtain all rights necessary to reabandon the well and be responsible for the reabandonment.

2. The person or entity causing construction over or near the well - If the well was plugged and abandoned in conformance with Division requirements at the time of plugging

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and abandonment, and the property owner, developer, or local agency permitting the construction failed either to obtain an opinion from the supervisor or district deputy as to whether the previously abandoned well is required to be reabandoned, or to follow the advice of the supervisor or district deputy not to undertake the construction, then the person or entity causing the construction over or near the well shall obtain all rights necessary to reabandon the well and be responsible for the reabandonment.

3. The party or parties responsible for disturbing the integrity of the abandonment - If the well was plugged and abandoned in conformance with Division requirements at the time of plugging and abandonment, and after that time someone other than the operator or an affiliate of the operator disturbed the integrity of the abandonment in the course of developing the property, then the party or parties responsible for disturbing the integrity of the abandonment shall be responsible for the reabandonment.

No well work may be performed on any oil, gas, or geothermal well without written approval from the Division. Well work requiring approval includes, but is not limited to, mitigating leaking gas or other fluids from abandoned wells, modifications to well casings, and/or any other re-abandonment work. The Division also regulates the top of a plugged and abandoned well's minimum and maximum depth below final grade. CCR §1723.5 states well casings shall be cut off at least 5 feet but no more than 10 feet below grade. If any well needs to be lowered or raised (i.e. casing cut down or casing riser added) to meet this regulation, a permit from the Division is required before work can start.

The Division makes the following additional recommendations to the local permitting agency, property owner, and developer:

1. To ensure that present and future property owners are aware of (a) the existence of all wells located on the property, and (b) potentially significant issues associated with any improvements near oil or gas wells, the Division recommends that information regarding the above identified well(s), and any other pertinent information obtained after the issuance of this letter, be communicated to the appropriate county recorder for inclusion in the title information of the subject real property.

2. The Division recommends that any soil containing hydrocarbons be disposed of in accordance with local, state, and federal laws. Please notify the appropriate authorities if soil containing significant amounts of hydrocarbons is discovered during development.

As indicated in PRC § 3106, the Division has statutory authority over the drilling, operation, maintenance, and abandonment of oil, gas, and geothermal wells, and attendant facilities, to prevent, as far as possible, damage to life, health, property, and natural resources; damage to underground oil, gas, and geothermal deposits; and damage to underground and surface waters suitable for irrigation

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or domestic purposes. In addition to the Division's authority to order work on wells pursuant to PRC §§ 3208.1 and 3224, it has authority to issue civil and criminal penalties under PRC §§ 3236, 3236.5, and 3359 for violations within the Division's jurisdictional authority. The Division does not regulate grading, excavations, or other land use issues.

If during development activities, any wells are encountered that were not part of this review, the property owner is expected to immediately notify the Division's construction site well review engineer in the Inland district office, and file for Division review an amended site plan with well casing diagrams. The District office will send a follow-up well evaluation letter to the property owner and local permitting agency.

Should you have any questions, please contact me at (661) 326-6016 or via email at Victor.Medrano@conservation.ca.gov

Sincerely,

DocuSigned by:
Rohit Sharma
4F498F38AE3B48A...

Chris Jones
Acting District Deputy

California
Department of Conservation
Geologic Energy Management Division

Gavin Newsom, Governor
David Shabazian, Director
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## Wells Not Abandoned to Current Division Requirements as Prescribed by Law & Projected to be Built Over or Have Future Access Impeded

The wells listed below are not abandoned to current Division requirements as prescribed by law, and based upon information provided, are projected to be built over or have future access impeded. **The Division expects these wells to be reabandoned in compliance with current California law, prior to development activities.**

| API | Well Designation | Operator | Well Evaluations |
|---|---|---|---|
| 0403100583 | Kreyenhagen 23-35 | Richard S. Rheem, Operator | CCR § 1723.5: The hole and all annuli shall be plugged at the surface with at least a 25-foot cement plug.<br><br>CCR § 1723.2 (a)(1): A minimum 200-foot cement plug shall be placed across all fresh-saltwater interfaces.<br><br>Notes:<br>1. Drilled Total Depth: 9,090', 10.75" Casing Shoe @ 510', Open Hole (510' - 9,090'), Base of Fresh water sands @ 2,470', Dry Hole (no oil or gas shows)<br><br>2. Surface cement plug (10' - 0'), Casing Shoe cement plug (560' - 440'), BFW cement plug (2,520' - 2,410') |
| | | | |
| | | | |
| | | | |

California
Department of Conservation
Division of Land Resource Protection

Gavin Newsom, Governor
David Shabazian, Director

AUGUST 24, 2020

VIA EMAIL: PLANNING@LEMOORE.COM
Judy Holwell
Community Development Director
City of Lemoore
Lemoore, CA 93245

Dear Ms. Holwell:

NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT AND NOTICE OF AVAILABILITY OF AN INITIAL STUDY FOR THE PROPOSED LACEY RANCH AREA MASTER PLAN PROJECT, SCH# 2020080314

The Department of Conservation's (Department) Division of Land Resource Protection (Division) has reviewed the Notice of Preparation and Initial Study for the Lacey Ranch Area Master Plan Project (Project). The Division monitors farmland conversion on a statewide basis, provides technical assistance regarding the Williamson Act, and administers various agricultural land conservation programs. We offer the following comments and recommendations with respect to the proposed project's potential impacts on agricultural land and resources.

Project Description

The applicant is proposing to subdivide and develop approximately 156 acres of land into a planned residential community with a mix of single-family and multi-family housing units. Approximately 75% of the site will be developed with single family housing units on a variety of lot sizes, with the remainder to be developed with multi-family housing and parks/trails.

The applicant proposes to annex the site into the City Limits of Lemoore and will require a General Plan Amendment and Zone Change to change the land use designations from agriculture to residential. The Project will also require a modification to the City's Sphere of Influence. The project site was historically, and is currently, used for agriculture and contains Prime Farmland as identified by the Department of Conservation's Farmland Mapping and Monitoring Program.[1] The site is also subject to a Williamson Act contract.

[1] California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, https://maps.conservation.ca.gov/DLRP/CIFF/

Department Comments

The conversion of agricultural land represents a permanent reduction and significant impact to California's agricultural land resources. Under CEQA, a lead agency should not approve a project if there are feasible alternatives or feasible mitigation measures available that would lessen the significant effects of the project.[2] All mitigation measures that are potentially feasible should be included in the project's environmental review. A measure brought to the attention of the lead agency should not be left out unless it is infeasible based on its elements.

As the courts have shown[3], agricultural conservation easements on land of at least equal quality and size can mitigate project impacts in accordance with CEQA Guideline § 15370. The Department highlights agricultural conservation easements because of their acceptance and use by lead agencies as an appropriate mitigation measure under CEQA. Agricultural conservation easements are an available mitigation tool and should always be considered; however, any other feasible mitigation measures should also be considered.

A source that has proven helpful for regional and statewide agricultural mitigation banks is the California Council of Land Trusts. They provide helpful insight into farmland mitigation policies and implementation strategies, including a guidebook with model policies and a model local ordinance. The guidebook can be found at:

http://www.calandtrusts.org/resources/conserving-californias-harvest/

Conclusion

Prior to approval of the proposed project the Department recommends further discussion of the following issues:

- Type, amount, and location of farmland conversion resulting directly and indirectly from implementation of the proposed project.
- Impacts on any current and future agricultural operations in the vicinity; e.g., land-use conflicts, increases in land values and taxes, loss of agricultural support infrastructure such as processing facilities, etc.
- Incremental impacts leading to cumulative impacts on agricultural land. This would include impacts from the proposed project, as well as impacts from past, current, and likely future projects.
- Proposed mitigation measures for all impacted agricultural lands within the proposed project area.
- Projects compatibility with, or, potential contract resolutions for land in an agricultural preserve and/or enrolled in a Williamson Act contract.

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[2] Public Resources Code section 21002.
[3] *Masonite Corp. v. County of Mendocino* (2013) 218 Cal.App.4th 230, 238.

Thank you for giving us the opportunity to comment on the Notice of Preparation and Initial Study for the Lacey Ranch Area Master Plan Project. Please provide this Department with notices of any future hearing dates as well as any staff reports pertaining to this project. If you have any questions regarding our comments, please contact Farl Grundy, Associate Environmental Planner at (916) 324-7347 or via email at Farl.Grundy@conservation.ca.gov.

Sincerely,

Monique Wilber

Monique Wilber

Conservation Program Support Supervisor

www.candbplanning.com

# APPENDIX B

# AGRICULTURAL LAND CONVERSION ANALYSIS

## Lacey Ranch Area Master Plan Project

June 2021

PREPARED FOR:

City of Lemoore
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Lemoore, CA 93245

APPLICANT:

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# ACRONYMS

| | |
|---|---|
| AB | Assembly Bill |
| APN | Assessor's Parcel Number |
| CDFA | California Department of Food and Agriculture |
| CEQA | California Environmental Quality Act |
| DOC | California Department of Conservation |
| FMMP | Farmland Mapping and Monitoring Program |
| FPPA | Farmland Protection Policy Act |
| IFM | Important Farmland Maps |
| LCC | Land Capability Classification System |
| LESA | Land Evaluation and Site Assessment |
| MSL | Mean Sea Level |
| NRCS | Natural Resources Conservation Service |
| PRC | Public Resources Code |
| SCE | Southern California Edison |
| SUP | Special Use Permit |
| TCGP | Tulare County General Plan |
| UDB | Urban Development Boundary |
| USDA | United States Department of Agriculture |
| WRCC | Western Regional Climate Center |
| ZOI | Zone of Influence |

# SECTION ONE – INTRODUCTION

Agriculture in the United States has been historically afflicted with many challenges such as weather, pests, and disease, as well as fluctuating markets, the need for capital investments, and rapidly advancing technology. In recent decades, however, the pressures for growth have led to the significant conversion of farmland to non-farm use. Clearly, the loss of farmland resources and subsequent land use conflicts that have arisen as a result of non-farm growth have been a legitimate cause for concern. The loss of agricultural lands affects many local economies, threatens the way of life for many farmers, and calls into question the ability of this rapidly-developing world to provide food for this population growth. These challenges, among others, are facing Tulare County, which is located in the San Joaquin Valley, California's top agricultural producing region.[1]

The study area includes the portions of Kings County that will likely face the most intense growth pressures related to urbanization. While the San Joaquin Valley is an important producer of agricultural products worldwide, it is also one of the areas of California that is projected to bear massive future growth as the State's population is expected to reach 50 million by 2050.[2] Growth within the San Joaquin's farming counties is caused by growth restrictions and excessive cost of housing in coastal and urban counties, and relatively inexpensive land sold by willing farmers. Due to these factors, land use regulating agencies across the Valley must act to manage future urban growth while preserving important agricultural lands for future use.

## 1.1 Purpose and Analysis Methods

This document is an Agricultural Land Conversion Study (Study) for the development of the Lacey Ranch Area Master Plan (Project) located in Kings County. The Project includes the construction of residential units on approximately 156-acres of land currently in alfalfa production and annexation of that land from Kings County into the City of Lemoore.

[1] United States Environmental Protection Agency, Pacific Southwest, Region 9 Strategic Plan, 2011-2014. https://archive.epa.gov/region9/strategicplan/web/html/sanjoaquin.html. Accessed August 2020.

[2] Demographics. CA @ 50 Million. California Population Estimates 1900 – 2060. https://ca50million.ca.gov/demographics/#:~:text=By%202050%2C%20California's%20population%20is,first%20decade%20of%20this%20century. Accessed August 2020.

Projects involving changes in land use sometimes convert agricultural lands to non-agricultural uses. Conserving productive agricultural lands requires a project-specific evaluation of the direct and indirect effects, as well as the cumulative effects of the agricultural land conversion. This Study provides a checklist of items that should be considered by those analyzing the proposed Project site. In order to analyze the proposed Project's potential impact to agricultural lands, this Study utilized factors identified in the County of Kings 2035 General Plan (General Plan) and the California Department of Conservation's California Agricultural Land Evaluation and Site Assessment (LESA) Model.

The City of Lemoore, as a Lead Agency, typically bases a determination of agricultural resources significance on the thresholds established by the California Environmental Quality Act (CEQA) Guidelines. The Environmental Checklist Form of the CEQA Guidelines contains a list of impacts that may be deemed potentially significant. The Lead Agency should address questions from this checklist that are relevant to a project's environmental effects. The following significance thresholds are contained in Appendix G of the CEQA Guidelines.

***Agricultural Resources*** *– In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agricultural and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project, and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the Project:*

*a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?*

*b) Conflict with existing zoning for agricultural use or a Williamson Act contract?*

*c) Conflict with existing zoning for, or cause rezoning of forest land (as defined in Public Resources Code § 12220(q), timberland (as defined by Public Resources Code § 4526), or timberland zoned Timberland Production (as defined by Government Code § 51104(g))?*

*d) Result in the loss of forest land or conversion of forest land to non-forest use?*

e) *Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?*

This study was conducted in the context of CEQA (California Public Resources Code Sections 21000 et seq.).

## 1.2 Proposed Project Location

The Project is located on approximately 156-acres immediately north of the City of Lemoore in Kings County and is bounded by W. Lacey Blvd to the north and 18th Avenue to the west. The Project is on assessor parcel number 021-030-057-000. The site lies within a portion of the NW quarter of Section 35, Township 18 South, Range 20 East, Mount Diablo Base and Meridian.

The area surrounding the proposed Project site consists largely of rural agricultural land and homesteads, and the residential units associated with the City of Lemoore immediately to the south. The site is partially designated by the City of Lemoore General Plan for future residential uses and is currently zoned as Limited Agricultural-10 District (AL-10) by Kings County. Approximately one-third of the site (the southern one-third) is within the City's Sphere of Influence (SOI) while the remaining two-thirds are currently outside the SOI. The entire site is within the adopted Urban Development Boundary and proposed for annexation into the City limits of Lemoore.

## 1.3 Proposed Project Characteristics

The proposal for the site consists of the construction of up to 825 residential units broken down as follows:

- ±164 compact lots with an average lot size of 4,500 square feet
- ±310 medium lots with an average lot size of 6,500 square feet
- ±73 estate lots with an average lot size of 9,500 square feet
- ±145 multifamily units at 20 units per acre
- ±59 multifamily units at 12 units per acre

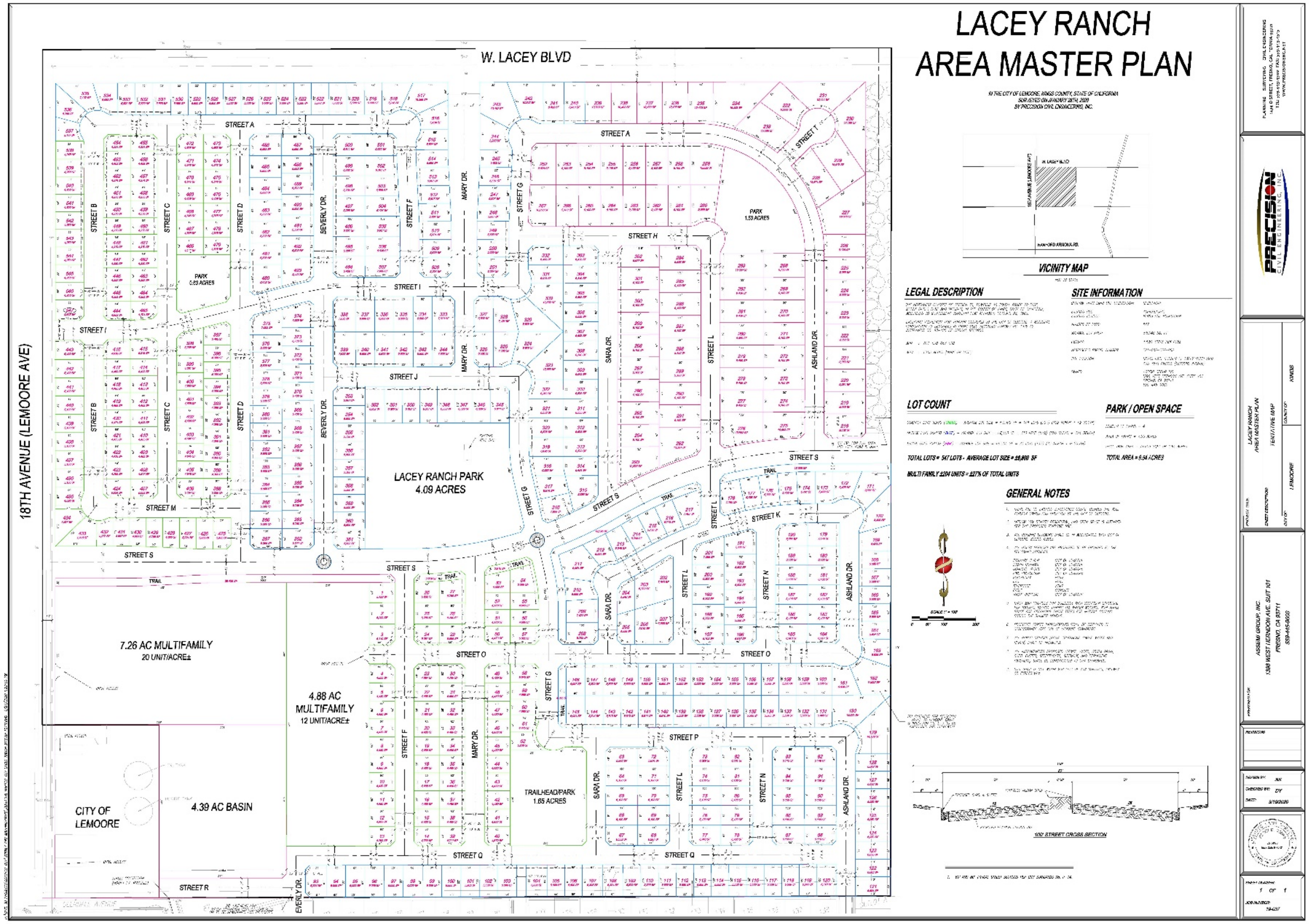
The Project includes a total of four parks for a total of 7.9 acres and 1.64 acres of trail area, as depicted on Figure 1. The 1.64 acres of trail area will be designated and zoned consistent with the designations and zoning of their adjacent parcels.

Project construction will require site preparation activities such as demolition to remove the existing alfalfa crop and site grading activities. Construction is expected to occur over 16 years as determined by market demands and will be constructed over four phases, broken down as follows:

- Phase 1 – 125 single family lots and 90 multifamily lots
- Phase 2 – 125 single family lots and 100 multifamily lots
- Phase 3 – Dependent on market conditions
- Phase 4 – Dependent on market conditions

It is anticipated that the Project would begin development in 2022.

**Figure 1**
**Proposed Site Plan**



# SECTION TWO – REGULATORY SETTING

## 2.1 Federal

**Farmland Protection Policy Act (7 USC 4201)**

The purpose of the Farmland Protection Policy Act (FPPA) is to minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses. It additionally directs Federal programs to be compatible with State and local policies for the protection of farmlands. Congress passed the Agriculture and Food Act of 1981 (Public Law 97–98) containing the FPPA—Subtitle I of Title XV, Sections 1539–1549. The final rules and regulations were published in the Federal Register on June 17, 1994.

The FPPA is intended to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures that, to the extent possible, Federal programs are administered to be compatible with State, local units of government, and private programs and policies to protect farmland. Federal agencies are required to develop and review their policies and procedures to implement the FPPA every two years. The FPPA does not authorize the Federal Government to regulate the use of private or non-Federal land or, in any way, affect the property rights of owners.

For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of Statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forestland, pastureland, cropland, or other land, but not water or urban built-up land.

Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a Federal agency or with assistance from a Federal agency.[3]

[3] USDA Natural Resources Conservation Service. Farmland Protection Policy Act. http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/landuse/fppa/. Accessed August 2020.

## 2.2 State of California

**California Department of Conservation, Division of Land Resource Protection**

The California Department of Conservation (DOC) applies the Natural Resources Conservation Service (NRCS) soil classifications to identify agricultural lands. Pursuant to the DOC's Farmland Mapping and Monitoring Program (FMMP), these designated agricultural lands are included in the Important Farmland Maps (IFM) used in planning for the present and future of California's agricultural land resources. The FMMP was established in 1982 to assess the location, quality, and quantity of agricultural lands and the conversion of these lands. The FMMP provides analysis of agricultural land use and land use changes throughout California. The DOC has a minimum mapping unit of 10 acres, with parcels that are smaller than 10 acres being absorbed into the surrounding classifications.

The list below provides a description of all the categories mapped by the FMMP[4].

- **Prime Farmland**. Farmland that has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

- **Farmland of Statewide Importance**. Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

- **Unique Farmland**. Farmland of lesser quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated, but may include nonirrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.

- **Farmland of Local Importance**. Lands that produce dryland grains (barley and wheat); lands that have physical characteristics that would qualify for "Prime" or "Statewide Important" farmlands except for the lack of irrigation water; and

[4] California Department of Conservation Division of Land Resource Protection. Farmland Mapping and Monitoring Program. Important Farmland Categories. https://www.conservation.ca.gov/dlrp/fmmp/Pages/Important-Farmland-Categories.aspx#:~:text=Important%20Farmland%20Categories.%201%20Rural%20Residential%20Land%20%28R%29,an%20extent%20of%20at%20least%2040%20acres.%20. Accessed August 2020.

lands that currently support confined livestock, poultry, and/or aquaculture operations.

- **Grazing Land**. Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities. The minimum mapping unit for Grazing Land is 40 acres.

- **Urban and Built-up Land**. Land occupied by structures with a building density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel. This land is used for residential, industrial, commercial, institutional, public administrative purposes, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

- **Other Land**. Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines and borrow pits; and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

**California Land Conservation (Williamson Act)**

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, is promulgated in California Government Code Sections 51200–51297.4, and therefore is applicable only to specific land parcels within the State of California. The Williamson Act enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space uses in return for reduced property tax assessments. Private land within locally designated agricultural preserve areas is eligible for enrollment under Williamson Act contracts. However, an agricultural preserve must consist of no less than 100 acres. In order to meet this requirement, two or more parcels may be combined if they are contiguous, or if they are in common ownership.

The Williamson Act program is administered by the DOC, in conjunction with local governments, which administer the individual contract arrangements with landowners. The landowner commits the parcel to a 10-year period wherein no conversion out of agricultural use is permitted. Each year the contract automatically

renews unless a notice of non-renewal or cancellation is filed. In return, the land is taxed at a rate based on the actual use of the land for agricultural purposes, as opposed to its unrestricted market value. An application for immediate cancellation can also be requested by the landowner, provided that the proposed immediate cancellation application is consistent with the cancellation criteria stated in the California Land Conservation Act and those adopted by the affected county or city. Non-renewal or immediate cancellation does not change the zoning of the property. Participation in the Williamson Act program is dependent on county adoption and implementation of the program and is voluntary for landowners.

As defined by the Williamson Act, prime agricultural land includes: (1) Class I and II soils as classified by the NRCS; (2) land that qualifies for rating 80 through 100 in the Storie Index Rating by the University of California, Division of Agricultural Sciences; (3) land that supports livestock used for the production of food and fiber and with at least one animal unit per acre; 4) land planted with fruit or nut-bearing crops that yield not less than $200 per acre annually during commercial bearing periods; or (5) land that has returned from the production of unprocessed agricultural plant products and annual gross value of not less than $200 per acre for three of the previous five years.[5]

The Williamson Act states that a board or council by resolution shall adopt rules governing the administration of agricultural preserves. The rules of each agricultural preserve specify the uses allowed. Generally, any commercial agricultural use will be permitted within any agricultural preserve. In addition, local governments may identify compatible uses permitted with a use permit California Government Code Section 51238 states that, unless otherwise decided by a local board or council, the erection, construction, alteration, or maintenance of electric and communication facilities, as well as other facilities, are determined to be compatible uses within any agricultural preserve. Also Section 51238 states that board of supervisors may impose conditions on lands or land uses to be placed within preserves to permit and encourage compatible uses in conformity with Section 51238.1. Further, California Government Code Section 51238.1 allows a board or council to allow as compatible any use that without conditions or mitigations would otherwise be considered incompatible. However, this may occur only if that use meets the following conditions:

[5] Government Code, Section 51201(c)(1)-(5)).

- The use will not significantly compromise the long-term productive agricultural capability of the subject contracted parcel or parcels on other contracted lands in agricultural preserves.
- The use will not significantly displace or impair current or reasonably foreseeable agricultural operations on the subject contracted parcel or parcels or on other contracted lands in agricultural preserves. Uses that significantly displace agricultural operations on the subject contracted parcel or parcels may be deemed compatible if they relate directly to the production of commercial agricultural products on the subject contracted parcel or parcels or neighboring lands, including activities such as harvesting, processing, or shipping.
- The use will not result in the significant removal of adjacent contracted land from agricultural or open-space use.

Section 51243.5 states that a city may exercise its option to not succeed to the rights, duties, and powers of the county under the contract if each of the following had occurred prior to January 1, 1991:

(1) The land being annexed was within one mile of the city's boundary when the contract was executed.

(2) The city had filed with the local agency formation commission a resolution protesting the execution of the contract.

(3) The local agency formation commission had held a hearing to consider the city's protest to the contract.

(4) The local agency formation commission had found that the contract would be inconsistent with the publicly desirable future use and control of the land.

(5) The local agency formation commission had approved the city's protest.

**Farmland Security Zone Act**

The Farmland Security Zone Act is similar to the Williamson Act and was passed by the California State Legislature in 1999 to ensure that long-term farmland preservation is part of public policy. Farmland Security Zone Act contracts are sometimes referred to as "Super Williamson Act Contracts." Under the provisions of this act, a landowner already under a Williamson Act contract can apply for Farmland Security Zone status by entering into a contract with the county. Farmland Security Zone classification automatically renews each year for an additional 20 years. In return for a further 35

percent reduction in the taxable value of land and growing improvements (in addition to Williamson Act tax benefits), the owner of the property promises not to develop the property into nonagricultural uses.

**Public Resources Code Section 21060.1**

The Public Resource Code (PRC) Section 21060.1 defines agricultural land for the purposes of assessing environmental impacts using the FMMP. The FMMP was established in 1982 to assess the location, quality, and quantity of agricultural lands and the conversion of these lands. The FMMP provides analysis of agricultural land use and land use changes throughout California.

## 2.3 City of Lemoore

**2030 Lemoore General Plan**

The 2030 Lemoore General Plan (General Plan) has policies that apply to projects within the City of Lemoore that serve to protect farmland. General Plan Implementing Policies are listed below.

COS-I-1 Protect lands designated for Agricultural/ Rural/Conservation uses with appropriate zoning consistent with the General Plan.

COS-I-2 Identify a secure funding mechanism for the purchase of conservation easements to support farmland preservation and a green space buffer on County land surrounding the Lemoore Planning Area, with particular emphasis on land east of the City.

*There are several ways to obtain funding for farmland conservation easements, including but not limited to, development impact fees, transfers of development rights (TDRs), tax allocations/appropriations, grans, donations or bonds. Each tool has strength and weaknesses and the options must be evaluated to choose the best one for Lemoore. Implementation will necessitate cooperation with the County, usually in the form of a Memorandum of Understanding (MOU), and would also benefit from guidance through applicable land trust organizations, such as the American Farmland Trust or the California Council of Land Trusts.*

COS-I-3 Work with the County to evaluate the need for and feasibility of creating a County Farmland Trust or Open Space District to negotiate open space transactions, hold easements, pursue local open space and farmland preservation policies.

*A land trust of open space district would be voter-established entity with authority hold and manage lands for farmland preservation and conservation purposes. Donation of easements to a land trust or open space district may validate easements for tax purposes.*

# SECTION THREE – ENVIRONMENTAL SETTING

## 3.1 State of California

**State of California Agricultural Production**

The sales value generated by California agriculture increased by more than 1 percent between the 2018 and 2019 crop years. The state's 69,900 farms and ranches received $50.1 billion for their output, up from the $49.6 billion received in 2018. California's revenue was led by the dairy industry followed by almonds and grapes.[6]

Grape production generated $5.4 billion in cash receipts in 2019, down 13.6 percent from 2018. Production decreased by 9.1 percent from 2018, and prices received by growers decreased from $878 per ton of grapes in 2018 to $846 per ton in 2019. Almond cash receipts were $6.1 billion, up 8.8 percent from 2018. While the almond bearing acres increased by 90,000 acres, the price per pound fell from $2.50 in 2018 to $2.43 in 2019. Revenue generated from cattle was $3.1 billion, showing a decrease of 3.9 percent from the reported revenue of $3.2 billion in 2018.[7]

The dairy industry, California's leading commodity in cash receipts, generated $7.3 billion for milk production in 2019, up 15.2 percent from 2018. Milk production increased by 0.4 percent and milk prices received by producers increased from $15.78 per hundredweight of milk sold in 2018 to $18.11 per hundredweight in 2019. As the leading dairy producing state in the country, California produced about 19 percent of the nation's supply in 2019.[8]

[6] California Department of Food and Agriculture. California Agricultural Statistics Review. 2019-2020. https://www.cdfa.ca.gov/Statistics/PDFs/2020_Ag_Stats_Review.pdf. Accessed May 2021.
[7] Ibid.
[8] Ibid.

California remained the leading state in cash farm receipts in 2019 with combined commodities representing over 13 percent of the U.S. total. California's leading crops remained fruits, nuts and vegetables.[9]

California accounts for 40 percent of all organic production in the U.S. and organic sales continue to grow in the state. In 2019, sales of organic products in California totaled more than $10.4 billion, which represents an increase of 3.5 percent from 2018.[10]

**State of California Farmland Conversion**

Of California's approximately 100 million acres of land, 43 million acres are used for agriculture. Of this, 16 million acres are grazing land and 27 million acres are cropland. Only about nine million acres of irrigated land are considered to be Prime, Unique or of Statewide Importance.[11]

Irrigated farmland in California decreased by 11,165 net acres between 2014 and 2016. The highest-quality farmland, known as Prime Farmland, decreased by 18,312 net acres, coupled with a Farmland of Statewide Importance decrease of 26,557 net acres.[12]

Urban development, which totaled 44,942 acres, was virtually the same as the 2012-14 update. The highest amount, 47 percent, occurred in the San Joaquin Valley region. This is the first time the San Joaquin Valley has taken the top spot in the State for new Urban and Built-up Land since FMMP began compiling regional conversion statistics in 1990.[13]

Land was removed from irrigated categories—to uses aside from urban—at a rate 17 percent lower than compared with the prior update (153,766 acres in 2014 and 128,105 acres in 2016). Land idling, where irrigated land was converted to nonirrigated land due to a lack of irrigation over time or conversion to dry farming, was responsible for 85 percent of this type of conversion. Irrigated land conversions due to idling are often associated with water resource limitations, market conditions, and salinity-related land idling. The southern San Joaquin Valley was most impacted by land idling. There were

[9] California Department of Food and Agriculture. California Agricultural Statistics Review. 2019-2020. https://www.cdfa.ca.gov/Statistics/PDFs/2020_Ag_Stats_Review.pdf. Accessed May 2021.

[10] Ibid.

[11] California Department of Food and Agriculture. AgVision 2030 White Paper. Agricultural Land Loss & Conversion. July 2009. http://www.cdfa.ca.gov/agvision/docs/Agricultural_Loss_and_Conservation.pdf. Accessed October 2020.

[12] California Department of Conservation. 2014-2016 Farmland Conversion Report. https://www.conservation.ca.gov/dlrp/fmmp/Pages/2014-2016_Farmland_Conversion_Report.aspx. Accessed May 2021.

[13] Ibid.

70,886 acres of land reclassified from irrigated land to Grazing Land or Farmland of Local Importance in the San Joaquin Valley due to idling, comprising 65 percent of the statewide total.[14]

Conversions of range and other lands to new irrigated land between 2014 and 2016 totaled 129,494 acres, an increase of 9 percent from the prior cycle. Sixty-five percent of these new irrigated lands did not have soil qualities to meet the Prime Farmland criteria. Seven counties had irrigated land expansions greater than 5,000 acres which included all the San Joaquin Valley counties, except Kings County. Many of the San Joaquin Valley additions were orchards added in the valley and along the Sierra Nevada foothills.[15]

## 3.2 Kings County

**Kings County Agricultural Production**

Agricultural products are one of Kings County's most important resources. The *2019 Crop Report* stated "The gross value of all agricultural crops and products produced during 2019 in Kings County was $2,187,693,000. This represents a decrease of $92,982,000 (4.1%) from the 2018 value.[16]

Fruit and Nut Crops had the largest increase in value at $43,645,000 (7.3%) due primarily to an increase in production and price of almonds. Seed Crops increased $1,906,000 (16.2%) due to an increase in acreage.[17]

Livestock and Poultry Products had the largest decrease in value at $72,682,000 (10.7%) due to a decrease in milk production. Vegetable crops decreased $34,465 (16%) due largely to a decrease in processing tomato acreage and production. Livestock and Poultry decreased $19,891,000 (7.1% due to less cattle, calves and poultry sold, as well as lower poultry prices. Field crops decreased $10,510,000 due primarily to lower pima

[14] California Department of Conservation. 2014-2016 Farmland Conversion Report. https://www.conservation.ca.gov/dlrp/fmmp/Pages/2014-2016_Farmland_Conversion_Report.aspx. Accessed May 2021.
[15] Ibid.
[16] Kings County Department of Agriculture 2019 Crop Report. Cover Story by Jimmy Hook, Agricultural Commissioner. https://www.countyofkings.com/home/showpublisheddocument/24293/637345497607270000. Accessed December 2020.
[17] Ibid.

cotton prices. Apiary products decreased $985,000 (6.6%) due largely to less acreage pollinated.[18]

## 3.3 Proposed Project Site

The 156-acre proposed Project site is currently in active agricultural production with alfalfa. The following section describes the relative yields of alfalfa hay grown on the proposed Project site during the past five years. The total value of the crop is based on 2019 crop data from the Kings County Department of Agriculture 2019 Crop Report.[19] The site is currently owned and farmed by the Assemi Group, Inc..

### 3.3.1 Agricultural Crops and Yields

According to Jeff Roberts of Assemi Group, Inc., approximately 155-acres of alfalfa hay has grown on the proposed Project site for the past five years and one acre is occupied by dirt roads.

Alfalfa hay was ranked number ten among the top ten commodities grown in Kings County for the year 2019 with a value of $45,276,000. The Kings County 2019 Crop Report indicates an acre of alfalfa hay produced a yield of 8.59 tons with a crop value of $205 per ton. Alfalfa crop yields and total value are provided in Table 1.

**Table 1**
**Annual Project Site Crop Yield**

| Crop | Bearing Acreage | Per Acre Yield/Ton | Total Tons | Unit Value per Ton ($) | Total Value ($) |
|---|---|---|---|---|---|
| Alfalfa hay | 155 | 8.59 | 1,331.5 | 205 | 272,957.50 |

### 3.3.2 Land Classifications

According to the FMMP[20], the proposed Project site is mapped as containing approximately 154 acres of Prime Farmland and one acre of Unique Farmland.

[18] Ibid.
[19] Ibid.
[20] California Department of Conservation. California Important Farmland Finder. https://maps.conservation.ca.gov/DLRP/CIFF/. Accessed December 2020.

### 3.3.3 Soil Suitability

**Soils**

The 155-acre proposed Project site is composed of two different soil types, as depicted in Table 2.

**Table 2**
**Project Site Soils and Storie Index[21]**

| Soil Type | Acreage | Site % | Storie Index | Characteristics |
|---|---|---|---|---|
| Nord Complex | 153.6 | 99.1 | Grade 1 | Alluvium derived from igneous rock. Well drained, no frequency of ponding, moderate available water storage |
| Whitewolf coarse sandy loam | 0.6 | 0.9 | Grade 2 | Alluvium derived from igneous and sedimentary rock. Somewhat excessively drained, no frequency of ponding and low available water storage. |

**Storie Index**

The Storie Index is a soil rating based on soil properties that govern a soil's potential for cultivated agriculture in California. Four factors that represent the inherent characteristics and qualities of the soil are considered in the index rating: profile characteristics, texture of the surface layer, slope, and other factors (e.g., drainage, salinity). A score ranging from 0 to 100 percent is determined for each factor, and the scores are then multiplied together to derive an index rating. Storie Index ratings have been combined into six grade classes as follows: Grade 1 (excellent), 100 to 80, Grade 2 (good), 79 to 60; Grade 3 (fair), 59 to 40; Grade 4 (poor), 30 to 20, Grade 5 (very poor), 19 to 10, and Grade 6 (nonagricultural), less than 10. The Storie Index of the proposed Project site is provided in Table 2.

[21] United States Department of Agriculture, NRCS, Web Soil Survey: USDA Soil Survey of Kings County. Accessed August 2020. Attachment A.

## Land Capability Classification

The Land Capability Classification System is used by the United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) to determine a soil's agricultural productivity. The Land Capability Classification indicates the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops and the way they respond to management. Soils are rated from Class I to Class VIII, with soils having the fewest limitations receiving the highest rating (Class I). The "prime" soil classification indicates the absence of soil limitations, which if present, would require the application of management techniques (e.g., drainage, leeching, special fertilizing practices) to enhance production. A general description of soil classifications, as defined by NRCS, is provided in Table 3. The majority of the Project site (153.6 acres or 99.1%) is rated as having Class II soils. The site also has 1.3 acres of Class III soils.

**Table 3**
**Land Capability Classification[22]**

| Soil Classification | Description |
|---|---|
| I | Soils have few limitations that restrict their use. |
| II | Soils have moderate limitations that reduce the choice of plants, or that require special conservation practices. |
| III | Soils have severe limitations that reduce the choice of plants, require conservation practices, or both. |
| IV | Soils have very severe limitations that reduce the choice of plants, require very careful management, or both. |
| V | Soils are not likely to erode but have other limitations; impractical to remove soils that limit their use largely to pastures or range, woodland, or wildlife habitat. |
| VI | Soils have severe limitations that make them generally unsuited to cultivation and limit their use largely to pasture, or range, woodland, or wildlife habitat. |
| VII | Soils have very severe limitations that make them unsuited to cultivation and that restrict their use largely to pasture or range, woodland or wildlife habitat. |

[22] United States Department of Agriculture, NRCS, Web Soil Survey: USDA Soil Survey of Kings County. Accessed August 2020. Attachment A.

| | |
|---|---|
| **VIII** | Soils and landforms have limitations that preclude their use for commercial plant production and restrict their use to recreation, wildlife habitat, or water supply, or to aesthetic purposes. |

### 3.3.4 Williamson Act Contracts

As discussed in the Section 2.2, the California Land Conservation Act, also known as the Williamson Act, is a voluntary program that allows agricultural property owners to have their property assessed on the basis of its agricultural production rather than at the current market value. The proposed Project site is currently under a Williamson Act Contract.

### 3.3.5 Water

Hydrology in the Project site's vicinity is associated with the Tulare Lake Basin, one of three main subareas in Kings County. Approximately four percent of the Tulare Lake Basin is currently built-up and urbanized. The present-day Tulare Basin has been developed extensively for agriculture and petroleum extraction. Agricultural fields, vineyards, and orange groves are interspersed with oil fields. Grains, cotton, and corn are the main agricultural crops in the Tulare Basin. The Tulare Basin has mild winters and hot dry summers. Despite transient tule marsh areas, the area is dry and the valley summer heat is intense.

The Tulare Lake Basin is in the northern alluvial fan and basin subarea characterized by southwest to south flowing rivers, creeks, and irrigation canal systems that convey water from the Sierra Nevada to the west toward the Tulare Lake Bed. The southern portion of the basin is internally drained by the Kings, Kaweah, Tule, and Kern Rivers.[23]

The proposed Project lies over the Tulare Lake Groundwater Sub-Basin and water is managed by the South Fork Kings Groundwater Sustainability Agency. Surface water is provided by Lemoore Canal & Irrigation Company and groundwater is pumped from existing on-site agricultural wells.

[23] California Department of Water Resources. California's Groundwater Bulletin 118. 2004. Tulare Lake Hydrologic Region, San Joaquin Valley Groundwater Basin. https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/5_022_12_TulareLakeSubbasin.pdf. Accessed September 2020.

According to water well measurements maintained by the California Department of Water Resources between the years 2012 and 2016, groundwater surface elevations in the proposed Project area have ranged from 209 feet to 219 feet.[24]

### 3.3.6 Climate

The proposed Project site is located in the southern Central Valley of California; this area has the rainy winters and dry summers that are characteristic of a Mediterranean climate. The Central Valley has greater temperature extremes than the coastal areas because it is less affected by the moderating influence of the Pacific Ocean.

The Western Regional Climate Center (WRCC) provides climate data derived from stationary weather stations throughout the western United States. WRCC has developed a data set for monthly climate for the Project area (1899 to 2016); this data set is based on weather readings taken from the Hanford 043747 Station, the nearest weather station to the proposed Project site. The majority of rainfall occurs from November through March with an average annual rainfall of approximately eight inches per year. The monthly average temperature maximum was 97.8°F in July and the monthly average minimum was 35.2°F in January.[25]

[24] California Department of Water Resources, Water Data Library https://wdl.water.ca.gov/WaterDataLibrary/GroundwaterBrowseData.aspx?LocalWellNumber=&StationId=33156&StateWellNumber=18S20E26J001M&SelectedCounties=&SiteCode=363342N1197629W001&SelectedGWBasins=. Accessed January 2021.

[25] Western Regional Climate Center. Period of Record Monthly Climate Summary, Hanford, California. https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca3747. Accessed January 2021.

# SECTION FOUR – FARMLAND CONVERSION

## 4.1 Methodology

This study follows the California Land Evaluation Site Assessment Model to assess the proposed Project's potential impacts to agricultural lands.

### 4.1.1 Land Evaluation and Site Assessment

The California Land Evaluation and Site Assessment Model (LESA) provides guidelines for rating the relative quality of land resources based on specific measurable features. It is intended "to provide lead agencies with an optional methodology to ensure that significant effects on the environment of agricultural land conversions are quantitatively and consistently considered in the environmental review process."[26] It is designed to make determinations of the potential significance of a project's conversion of agricultural lands.

The LESA is composed of six different factors, which are divided into two sets: Land Evaluation and Site Assessment factors. Two Land Evaluation factors (Land Capability Classification Rating and Storie Index Rating) are based upon measures of soil resources quality and intended to measure the inherent, soil-based qualities of land as they relate to agricultural suitability. Four Site Assessment factors (Project Size Rating, Water Resource Availability Rating, Surrounding Agricultural Lands Rating, and Surrounding Protected Resource Lands Rating) are intended to measure social, economic, and geographic attributes that also contribute to the overall value of agricultural land.

The two sets of factors are evenly weighted, meaning the two Land Evaluation factors and four Site Assessment factors are of equal importance; however, for a given project, each of these six factors is separately rated in a 100-point scale. The factors are then weighted relative to one another and combined, resulting in a single numeric score for a given project, with a maximum attainable score of 100 points. This final project score becomes the basis for making a determination of the potential impacts' level of significance for the project, based upon a range of established scoring thresholds.

[26] Public Resources Code Section 21095

**Land Evaluation Factors**

The LESA includes two Land Evaluation factors, discussed below, that are separately rated.

The Land Capability Classification Rating (LCC): The LCC indicates the suitability of soils for most kinds of crops. Groupings are made according to the limitations of the soils when used to grow crops and the risk of damage to soils when used in agriculture. Soils are rated from Class I to Class VIII, with soils having the fewest limitations receiving the highest rating (Class I). Specific subclasses are also utilized to further characterize soils.

The Storie Index Rating: The Storie Index provides a numeric rating (based upon a zero to 100 scale) of the relative degree of suitability or value of a given soil for intensive agriculture. The rating is based upon soil characteristics only. Four factors that represent the inherent characteristics and qualities of the soil are considered in the Storie Index rating: profile characteristics, texture of the surface layer, slope, and other factors such as drainage or salinity. In some situations, only the United States Department of Agriculture's LCC information may be available. In those cases, the Storie Index ratings can be calculated from information contained in soil surveys by qualified soil scientists; however, if limitation of time and/or resources restrict the derivation of the Storie Index rating for a given project, it may be possible to adapt the Land Evaluation by relying solely upon the LCC rating.

**Site Assessment Factors**

The four Site Assessment factors that are separately rated and included in the LESA as discussed below.

The Project Size Rating: The Project Size rating is based upon identifying acreage figures for three separate groupings of soil classes within the project site, and then determining what grouping generates the highest Project Size score. The Project Size Rating relies upon acreage figures that were tabulated under the Land Capability Classification Rating.

The Water Resources Availability Rating: The Water Resources Availability rating is based upon identifying the various water sources that may supply a given property, and then determining whether different restrictions in supply are likely to take place in years that are characterized as being periods of drought and non-drought.

The Surrounding Agricultural Land Rating: Determination of the Surrounding Agricultural Land rating is based upon identification of a project's Zone of Influence (ZOI), which is defined as that land near a given project, both directly adjoining and within a defined distance away, that is likely to influence, and be influenced by, the agricultural land use of the subject project site. The Surrounding Agricultural Land rating is designed to provide a measurement of the level of agricultural land use for lands close to a given project. The LESA rates the potential significance of the conversion of an agricultural parcel that has a large proportion of surrounding land in agricultural production more highly than one that has relatively small percentage of surrounding land in agricultural production. The definition of the ZOI that accounts for surrounding lands (up to a minimum of 0.25 mile from the project boundary) is the result of several iterations during model development for assessing an area that will generally be a representative sample of surrounding land use. Figure 2 shows the ZOI surrounding the proposed Project site and the FMMP classifications. There are 568.7 acres of land within the ZOI of the project site; of those lands, 383.1 acres are Prime Farmland, 41.2 are Unique Farmland and the remaining 144.4 acres consist of rural residential land and urban and built-up land and semi-agricultural and rural commercial land.

The Surrounding Protected Resource Land Rating: The Surrounding Protected Resource Land rating is essentially an extension of the Surrounding Agricultural Land rating, and it is scored in a similar manner. Protected resource lands are those lands with long-term use restrictions that are compatible with or supportive of agricultural uses of land. Included among them are the following:

- Williamson Act contracted lands
- Publicly owned lands maintained as a park, forest, or watershed resources
- Lands with agricultural, wildlife habitat, open space, or other natural resource easements that restrict the conversion of such land to urban and industrial uses

**Final LESA Scoring**

A single LESA score is generated for a given project after all the individual Land Evaluation and Site Assessment factors have been scored and weighted. The LESA is weighted so that 50 percent of the total LESA score of a given project is derived from

the Land Evaluation factors and 50 percent is derived from the Site Assessment factors. The final LESA score was determined for the proposed Project and the modeling results are described in Table 4.

**Figure 2**
**Zone of Influence**

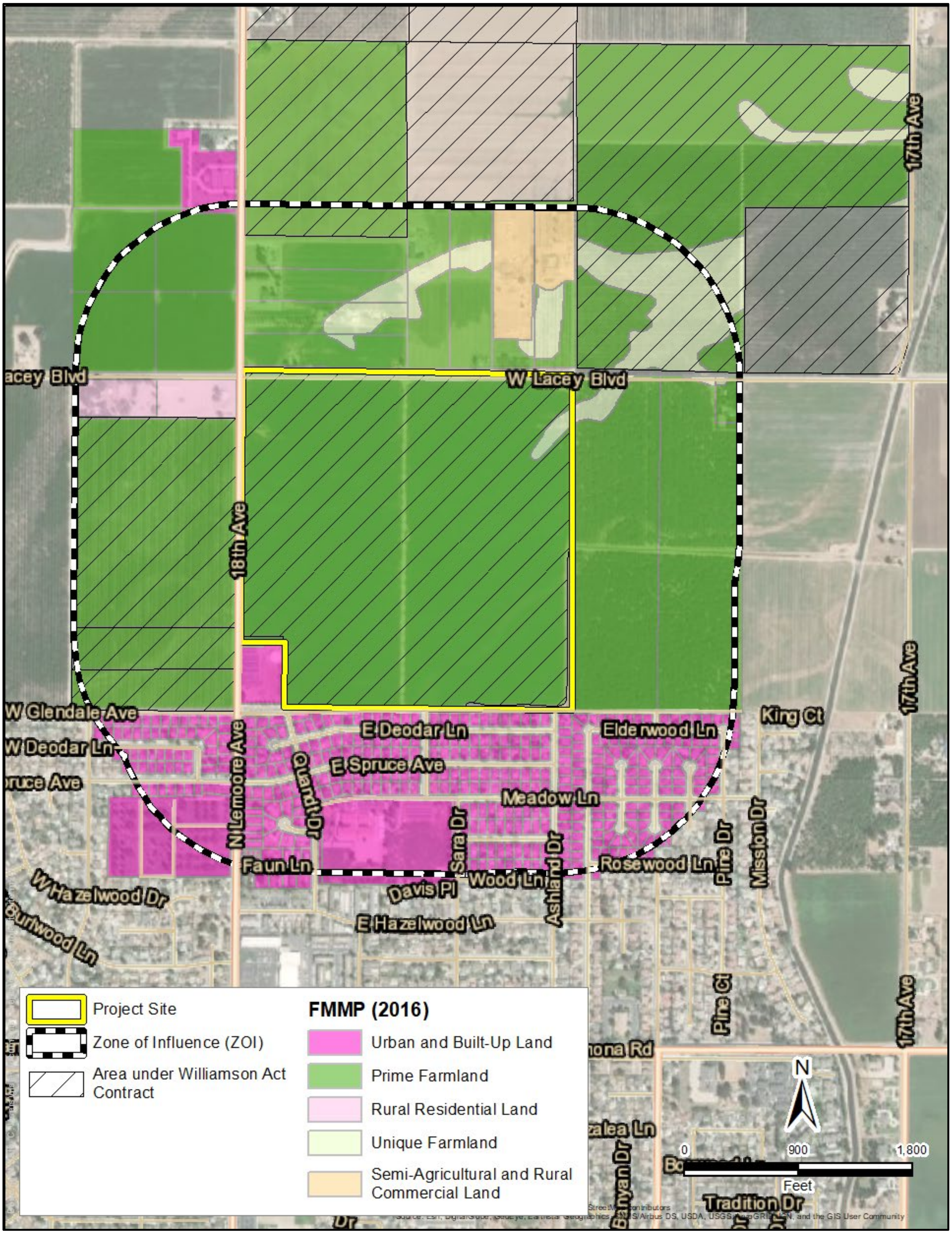


**Table 4**
**Land Evaluation and Site Assessment Model Scoring Summary**

| Category | Factor | Raw Points | Factor Weight | Weighted Points | Comments |
|---|---|---|---|---|---|
| Land Evaluation | Land Capability Class | 89.8 | 0.25 | 22.45 | Majority of site is LCC II |
| | Storie Index | 1.01 | 0.25 | 0.25 | Majority of site is ranked as 1 |
| | | **Subtotal** | **0.50** | **22.7** | |
| Site Assessment | Project Size | 100 | 0.15 | 15 | |
| | Water Resource Availability | 100 | 0.15 | 15 | Groundwater is available via on-site wells |
| | Surrounding Agricultural Land | 80 | 0.15 | 12 | |
| | Surrounding Protected Resource Lands | 60 | 0.05 | 3 | Approximately 68% of ZOI is under contract |
| | | **Subtotal** | **0.50** | **45** | |
| | | | **Final Score** | **67.7** | |

## Thresholds of Significance

The LESA is designed to make determinations of the potential significance of a project's conversion of agricultural lands during the Initial Study phase of the CEQA process. Scoring thresholds are based upon both the total LESA score and the component Land Evaluation (LE) and Site Assessment (SA) separate subscores. In this manner, the scoring thresholds are dependent upon the attainment of a minimum score for the LE and SA subscores so that a single threshold is not the result of heavily skewed subscores (i.e., a site with a very high LE score but a very low SA score, or vice-versa). The LESA scoring thresholds are described in Table 5.

**Table 5**
**LESA Scoring Thresholds**

| Total LESA Score | Scoring Decision |
|---|---|
| 0 to 39 points | Not considered significant |
| 40 to 59 points | Considered significant only if LE and SA subscores are each greater than or equal to 20 |
| 60 to 79 points | Considered significant unless either LE or SA subscore is less than 20 points |
| 80 to 100 points | Considered significant |

According to the LESA Threshold of Significance, the total score of 67.7 for the proposed Project site is considered significant as neither the LE or SA are less than 20 points.

# SECTION FIVE – IMPACT ANALYSIS AND RECOMMENDATIONS

## 5.1 Farmland Conversion

According to the FMMP,[27] the 155-acre proposed Project site is mapped as containing approximately 154 acres of Prime Farmland and one acre of Unique Farmland. The entire site is within the City of Lemoore Urban Development Boundary and the bottom third of the site is within the existing City of Lemoore Sphere of Influence.

A Land Evaluation and Site Assessment (LESA) was conducted to analyze potential impacts resulting from the conversion of farmland. The LESA was developed by the California Department of Conservation to make determinations of the potential significance of a project's conversion of agricultural lands. As described in Section 4.1.1 above, the LESA determined that the site-specific conversion of agricultural land would be significant.

**Level of Significance: Significant Impact.**

## 5.2 Zoning or Wiliamson Act Contract Conflicts

Agricultural Zoning

The Project site is currently zoned as Limited Agricultural-10 District by Kings County and as a part of the Project, the Zone District will be changed to Low, Medium and High Density Residential and Parks/Recreation by the City of Lemoore. The new zoning would accommodate the proposed Project and as such, there would be ***no impact*** resulting from a zoning conflict.

Williamson Act Contract

[27] California Department of Conservation. Farmland Mapping and Monitoring Program. Kings County. https://maps.conservation.ca.gov/DLRP/CIFF/. Accessed August 2020.

As noted, the Project site is subject to a Williamson Act contract, pursuant to Government Code Section 51200 et seq. The entire Project site is currently under a Williamson Act Contract; however, a protest was filed with the Local Agency Formation Commission (LAFCo) on December 1, 1982, in accordance with Section 51243.5 (a) of the Government Code, as amended, which will result in a dissolution of the Williamson Act Contract upon annexation of the subject site to the City.

With the dissolution of the Williamson Act Contract, there would be no conflict with a Williamson Act Contract and as such, ***no impacts*** to this subject area.

**Level of Significance: No Impact.**

## 5.3 Loss or Conversion of Forest Land

This impact evaluates the potential for the proposed Project to conflict with existing Forest Land zoning or result in the loss of forest land or result in the conversion of forest land to non-forest use. There is no forest land zoning on the proposed Project site and there are no forest uses on the site. No loss of forest land would occur, and no conflicts with forest land zoning would occur. Therefore, there is no impact.

**Level of Significance: No Impact.**

## 5.4 Other Conversion Factors

The requested annexation, general plan amendment and zone change is site specific and does not apply to any properties other than the Project site. The entire site is within the City of Lemoore's adopted Urban Development Boundary and the southern one-third is within the Sphere of Influence. The site has been planned for development and as such, there is little potential for the proposed Project to result in the conversion of any surrounding agricultural lands.

**Level of Significance: Less Than Significant.**

# APPENDIX C

Mitchell Air Quality Consulting

# Air Quality and Greenhouse Gas/Energy Analysis Report
# Lacey Ranch Area Master Plan
# City of Lemoore, California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January 18, 2021

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# ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| $\mu g/m^3$ | micrograms per cubic meter |
| AB | Assembly Bill |
| AQMP | Air Quality Management Plan |
| ARB | California Air Resources Board |
| BAU | Business as Usual |
| CalEEMod | California Emissions Estimator Model |
| CAPCOA | California Air Pollution Control Officers Association |
| CEQA | California Environmental Quality Act |
| CO | carbon monoxide |
| $CO_2$ | carbon dioxide |
| District | San Joaquin Valley Air Pollution Control District |
| DPM | diesel particulate matter |
| EMFAC | EMission FACtors Model |
| EPA | United States Environmental Protection Agency |
| GAMAQI | Guidance for Assessing and Mitigating Air Quality Impacts |
| GHG Rx | Greenhouse Gas Reduction Exchange |
| GHG(s) | greenhouse gas(es) |
| HAP | hazardous air pollutant |
| HRA | health risk assessment |
| IPCC | United Nations Intergovernmental Panel on Climate Change |
| KCAG | Kings County Association of Governments |
| MAQC | Mitchell Air Quality Consulting |
| $MMTCO_2e$ | million metric tons of carbon dioxide equivalent |
| $MTCO_2e$ | metric tons of carbon dioxide equivalent |
| $NO_X$ | nitrogen oxides |
| $PM_{10}$ | particulate matter less than 10 microns in diameter |
| $PM_{2.5}$ | particulate matter less than 2.5 microns in diameter |
| ppb | parts per billion |
| ppm | parts per million |
| ROG | reactive organic gases |
| RTP/SCS | Regional Transportation Plan/Sustainable Communities Strategy |
| SB | Senate Bill |
| SCAQMD | South Coast Air Quality Management District |
| SJVAPCD | San Joaquin Valley Air Pollution Control District |
| SMAQMD | Sacramento Metropolitan Air Quality Management District |
| $SO_X$ | sulfur oxides |
| VOC | volatile organic compounds |

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# SECTION 1: EXECUTIVE SUMMARY

## 1.1—Purpose and Methods of Analysis

The following air quality and greenhouse gas (GHG) analysis and energy analysis was prepared to evaluate whether the estimated criteria air pollutants, toxic air contaminants (TACs), and GHG emissions generated from the Lacey Ranch Area Master Plan Project (project) would cause significant impacts to air resources in the project area. This assessment was conducted within the context of the California Environmental Quality Act (CEQA, California Public Resources Code Sections 21000, et seq.). The methodology follows the Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI) prepared by the San Joaquin Valley Air Pollution Control District (SJVAPCD or District) for quantification of emissions and evaluation of potential impacts to air resources (SJVAPCD 2015a) and the SJVAPCD's Guidance for Valley Land-Use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (SJVAPCD 2009). An energy analysis was prepared to satisfy the requirements of CEQA Guidelines Appendix F: Energy Conservation.

## 1.2—Project Description

The project is a 751-dwelling unit residential development on 156 acres bounded by W. Lacey Boulevard to the north and 18$^{th}$ Avenue to the west. The project would subdivide and develop approximately 156 acres of land into a planned residential community with a mix of single-family and multi-family housing units and a total of 7.9 acres of parks, 1.64 acres of trail area, and a 4.39-acre storm drain basin. The project will be constructed in four phases over about 16 years with development starting in 2022. The exact numbers of each housing type may vary slightly, depending on final density.

The project site requires annexation from Kings County into the City of Lemoore, approval of a General Plan Amendment and Zone Change, adoption of the Lacey Ranch Master Plan, approval of Tentative Tract Maps for the single-family residential areas, and approval of Major Site Plan Review for the multi-family portions of the project.

The project's regional vicinity location is shown in Figure 1; an aerial view of the local vicinity is provided in Figure 2; the Lacey Ranch Area Master Plan is provided in Figure 3.

## 1.3—Summary of Analysis Results

The following is a summary of the analysis results. As shown below, the project would result in less than significant impacts for all air quality and GHG impact criteria analyzed.

**Impact AIR-1:** The project would not conflict with or obstruct implementation of the applicable air quality plan. **Less than significant impact.**

**Impact AIR-2:** The project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing

emissions, which exceed quantitative thresholds for ozone precursors). **Less than significant impact.**

**Impact AIR-3:** The project would not expose sensitive receptors to substantial pollutant concentrations. **Less than significant impact.**

**Impact AIR-4:** The project would not create objectionable odors affecting a substantial number of people. **Less than significant impact.**

**Impact GHG-1:** The project would not generate direct or indirect greenhouse gas emissions that would result in a significant impact on the environment. **Less than significant impact.**

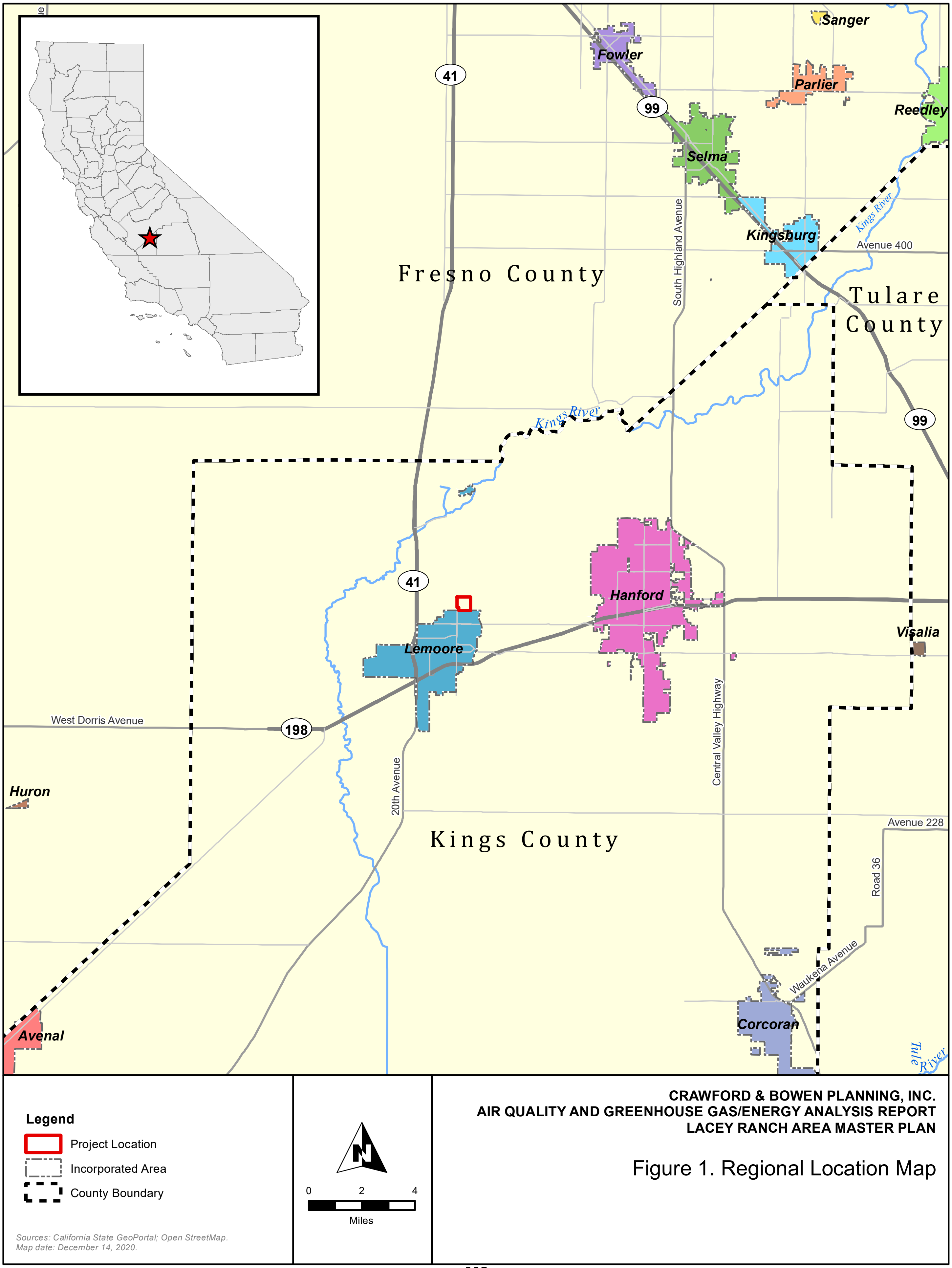
**Impact GHG-2:** The project would not conflict with any applicable plan, policy or regulation of an agency adopted to reduce the emissions of greenhouse gases. **Less than significant impact**.

**Impact ENERGY-1:** The project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. **Less than significant impact.**

**Impact ENERGY-2:** The project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. **Less than significant impact.**

## 1.4—Standard Conditions and Mitigation Measures Applied to the Project

No mitigation measures beyond compliance with mandatory regulations were required to demonstrate that the project would have less than significant for air quality, health risk, GHG, and energy impacts.

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**LACEY RANCH AREA MASTER PLAN**

Figure 1. Regional Location Map

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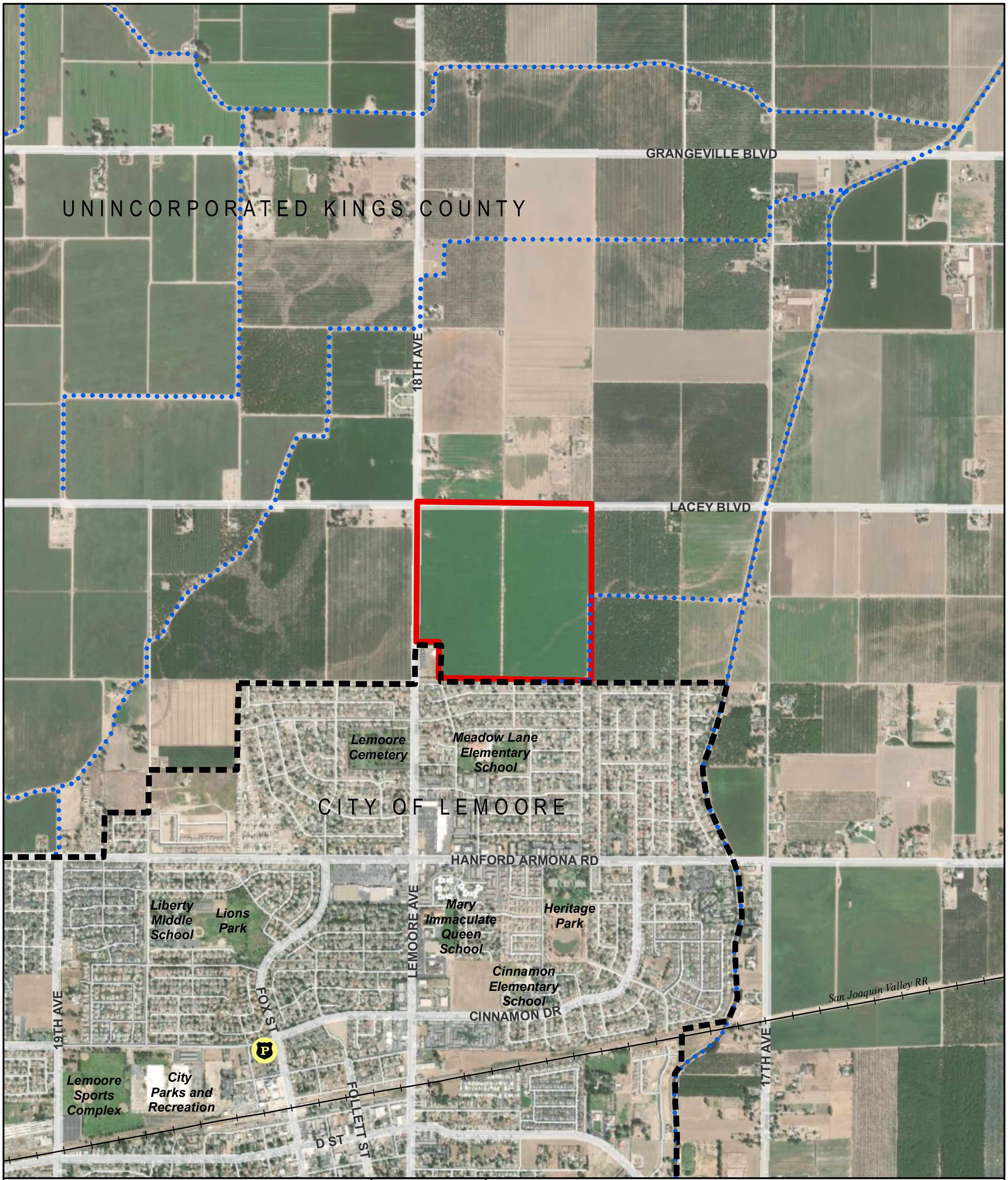


**Legend**

Project Boundary

Lemoore City Limits

Canal

Police Station

*Sources: Kings County GIS; USGS NHD; Google Maps. Map date: December 14, 2020.*

0 500 1,000
Feet

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**LACEY RANCH AREA MASTER PLAN**

Figure 2. Vicinity Map

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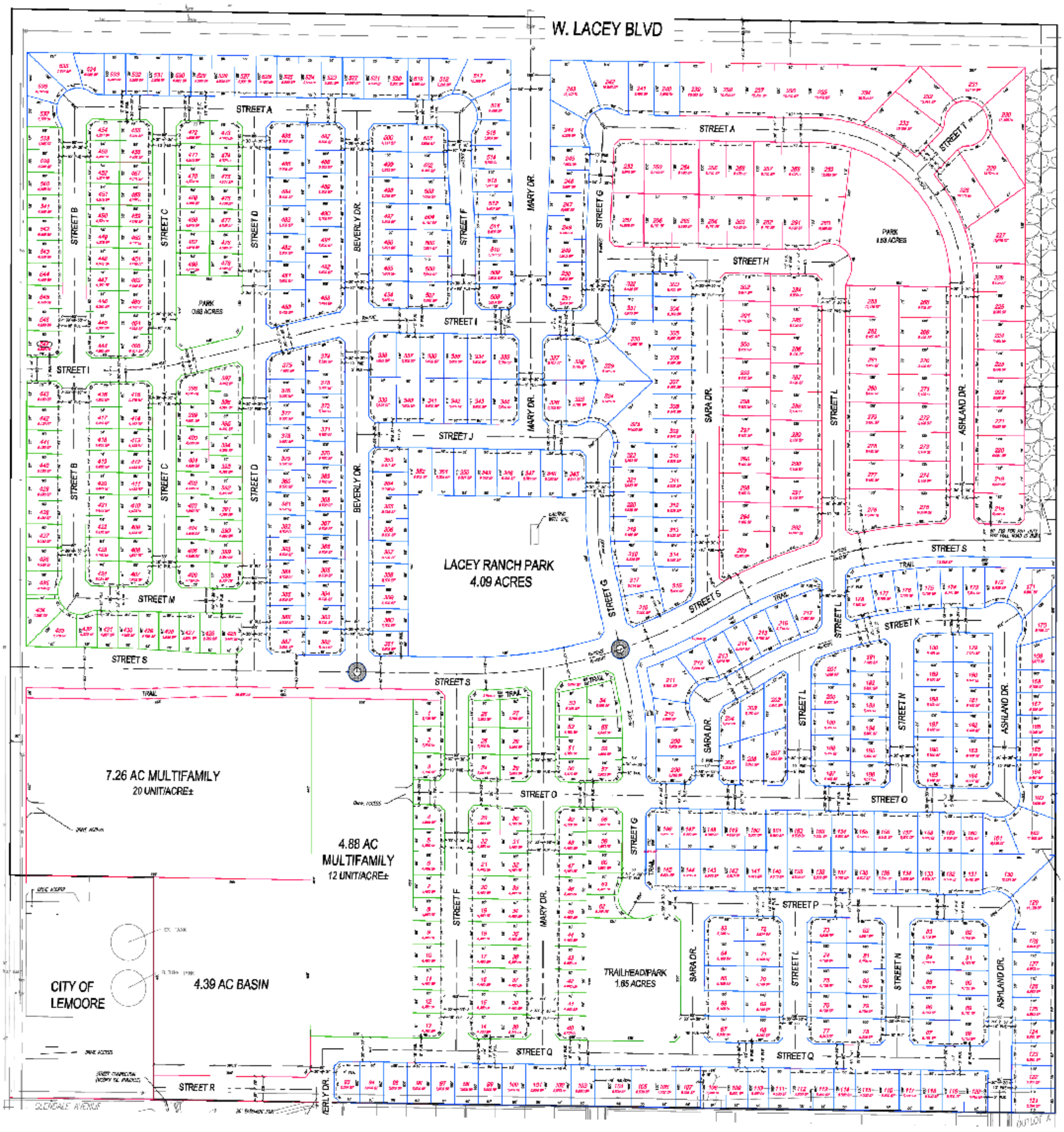


0 100 200
Feet

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**LACEY RANCH AREA MASTER PLAN**

Figure 3. Master Plan

*Sources: Precision Engineering, Inc. 3/19/2020.*
*Map date: December 14, 2020.*

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# SECTION 2: AIR QUALITY SETTING

## 2.1—Environmental Setting

Air quality impacts are both local and regional. Regional and local air quality is impacted by topography, dominant airflows, atmospheric inversions, location, and season. The project is located in the San Joaquin Valley Air Basin (Air Basin), which experiences some of the most challenging environmental conditions for air quality in the nation. The following section describes these conditions as they pertain to the Air Basin. The information in this section is primarily from the SJVAPCD's GAMAQI (SJVAPCD 2015a).

### 2.1.1 - San Joaquin Valley Air Basin

#### Topography

The topography of a region is important for air quality because mountains can block airflow that would help disperse pollutants, and can channel air from upwind areas that transports pollutants to downwind areas. The SJVAPCD covers the entirety of the Air Basin. The Air Basin is generally shaped like a bowl. It is open in the north and is surrounded by mountain ranges on all other sides. The Sierra Nevada mountains are along the eastern boundary (8,000 to 14,000 feet in elevation), the Coast Ranges are along the western boundary (3,000 feet in elevation), and the Tehachapi Mountains are along the southern boundary (6,000 to 8,000 feet in elevation).

#### Climate

The climate is important for air quality because of differences in the atmosphere's ability to trap pollutants close to the ground, which creates adverse air quality; inversely, the atmosphere's ability to rapidly disperse pollutants over a wide area prevents high concentrations from accumulating under different climatic conditions. The Air Basin has an "inland Mediterranean" climate and is characterized by long, hot, dry summers and short, foggy winters. Sunlight can be a catalyst in the formation of some air pollutants (such as ozone); the Air Basin averages over 260 sunny days per year.

Inversion layers are significant in determining pollutant concentrations. Concentration levels can be related to the amount of mixing space below the inversion. Temperature inversions that occur on the summer days are usually encountered 2,000 to 2,500 feet above the valley floor. In winter months, overnight inversions occur 500 to 1,500 feet above the valley floor.

Dominant airflows provide the driving mechanism for transport and dispersion of air pollution. The mountains surrounding the Air Basin form natural horizontal barriers to the dispersion of air contaminants. The wind generally flows south-southeast through the valley, through the Tehachapi Pass and into the Mojave Desert Air Basin portion of Kern County. As the wind moves through the Air Basin, it mixes with the air pollution generated locally, generally transporting air pollutants from the north to the south in the summer and in a reverse flow in the winter.

The winds and unstable air conditions experienced during the passage of winter storms result in periods of low pollutant concentrations and excellent visibility. Between winter storms, high pressure

and light winds allow cold moist air to pool on the San Joaquin Valley floor. This creates strong, low-level temperature inversions and very stable air conditions, which can lead to Tule fog. Wintertime conditions favorable to fog formation are also conditions favorable to high concentrations of $PM_{2.5}$ and $PM_{10}$.

## 2.2—Regulatory Setting

Air pollutants are regulated to protect human health and for secondary effects such as visibility and building soiling. The Clean Air Act of 1970 tasks the United States Environmental Protection Agency (EPA) with setting air quality standards. The State of California also sets air quality standards, which are in some cases more stringent than federal standards, in addition to addressing additional pollutants. The following section describes these federal and state standards and the health effects of the regulated pollutants.

### 2.2.1 - Clean Air Act

Congress established much of the basic structure of the Clean Air Act (CAA) in 1970, and made major revisions in 1977 and 1990. Six common air pollutants (also known as criteria pollutants) are addressed in the CAA: particulate matter, ground-level ozone, carbon monoxide, sulfur oxides, nitrogen oxides, and lead. The EPA labels these pollutants as criteria air pollutants because they are regulated by developing human health-based and/or environmentally based criteria (science-based guidelines), which sets permissible levels. The set of limits based on human health are called primary standards. Another set of limits intended to prevent environmental and property damage are called secondary standards (EPA 2014). The federal standards are called National Ambient Air Quality Standards (NAAQS). The air quality standards provide benchmarks for determining whether air quality is healthy at specific locations and whether development activities will cause or contribute to a violation of the standards. The criteria pollutants are:

- Ozone
- Nitrogen dioxide ($NO_2$)
- Lead
- Particulate matter ($PM_{10}$ and $PM_{2.5}$)
- Carbon monoxide (CO)
- Sulfur dioxide

The federal standards were set to protect public health, including that of sensitive individuals; thus, the EPA is tasked with updating the standards as more medical research is available regarding the health effects of the criteria pollutants. Primary federal standards are the levels of air quality necessary, with an adequate margin of safety, to protect the public health (ARB 2016).

### 2.2.2 - California Clean Air Act

The California Legislature enacted the California Clean Air Act (CCAA) in 1988 to address air quality issues of concern not adequately addressed by the federal CAA at the time. California's air quality problems were and continue to be some of the most severe in the nation, and required additional actions beyond the federal mandates. The California Air Resources Board (ARB) administers California Ambient Air Quality Standards (CAAQS) for the 10 air pollutants designated in the CCAA. The 10 state air pollutants are the six federal standards listed above as well visibility-reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride. The EPA authorized California to adopt its own regulations for motor vehicles and other sources that are more stringent than similar federal

regulations implementing the CAA. Generally, the planning requirements of the CCAA are less stringent than the federal CAA; therefore, consistency with the CAA will also demonstrate consistency with the CCAA.

## 2.2.3 - Toxic Air Contaminants

A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. There are no ambient air quality standards for TAC emissions. TACs are regulated in terms of health risks to individuals and populations exposed to the pollutants. The 1990 Clean Air Act Amendments significantly expanded the EPA's authority to regulate hazardous air pollutants (HAP). Section 112 of the Clean Air Act lists 187 hazardous air pollutants to be regulated by source category. Authority to regulate these pollutants was delegated to individual states. ARB and local air districts regulate TACs and HAPs in California.

## 2.2.4 - Air Pollutant Description and Health Effects

The federal and state ambient air quality standards, relevant effects, properties, and sources of the pollutants are summarized in Table 1.

## Table 1: Description of Air Pollutants

| Air Pollutant | Averaging Time | California Standard | Federal Standard[a] | Most Relevant Effects from Pollutant Exposure | Properties | Sources |
|---|---|---|---|---|---|---|
| Ozone | 1 Hour | 0.09 ppm | — | Irritate respiratory system; reduce lung function; breathing pattern changes; reduction of breathing capacity; inflame and damage cells that line the lungs; make lungs more susceptible to infection; aggravate asthma; aggravate other chronic lung diseases; cause permanent lung damage; some immunological changes; increased mortality risk; vegetation and property damage. | Ozone is a photochemical pollutant as it is not emitted directly into the atmosphere, but is formed by a complex series of chemical reactions between volatile organic compounds (VOC), $NO_X$, and sunlight. Ozone is a regional pollutant that is generated over a large area and is transported and spread by the wind. | Ozone is a secondary pollutant; thus, it is not emitted directly into the lower level of the atmosphere. The primary sources of ozone precursors (VOC and $NO_X$) are mobile sources (on-road and off-road vehicle exhaust). |
| | 8 Hour | 0.070 ppm | 0.070 ppm[f] | | | |
| Carbon monoxide (CO) | 1 Hour | 20 ppm | 35 ppm | Ranges depending on exposure: slight headaches; nausea; aggravation of angina pectoris (chest pain) and other aspects of coronary heart disease; decreased exercise tolerance in persons with peripheral vascular disease and lung disease; impairment of central nervous system functions; possible increased risk to fetuses; death. | CO is a colorless, odorless, toxic gas. CO is somewhat soluble in water; therefore, rainfall and fog can suppress CO conditions. CO enters the body through the lungs, dissolves in the blood, replaces oxygen as an attachment to hemoglobin, and reduces available oxygen in the blood. | CO is produced by incomplete combustion of carbon-containing fuels (e.g., gasoline, diesel fuel, and biomass). Sources include motor vehicle exhaust, industrial processes (metals processing and chemical manufacturing), residential wood burning, and natural sources. |
| | 8 Hour | 9.0 ppm | 9 ppm | | | |
| Nitrogen dioxide[b] ($NO_2$) | 1 Hour | 0.18 ppm | 0.100 ppm | Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; contribution to atmospheric discoloration; increased visits to hospital for respiratory illnesses. | During combustion of fossil fuels, oxygen reacts with nitrogen to produce nitrogen oxides—$NO_X$ (NO, $NO_2$, $NO_3$, $N_2O$, $N_2O_3$, $N_2O_4$, and $N_2O_5$). $NO_X$ is a precursor to ozone, $PM_{10}$, and $PM_{2.5}$ formation. $NO_X$ can react with compounds to form nitric acid and related small particles and result in PM-related health effects. | $NO_X$ is produced in motor vehicle internal combustion engines and fossil fuel-fired electric utility and industrial boilers. Nitrogen dioxide ($NO_2$) forms quickly from $NO_X$ emissions. $NO_2$ concentrations near major roads can be 30 to 100 percent higher than those at monitoring stations. |
| | Annual | 0.030 ppm | 0.053 ppm | | | |

## Table 1 (cont.): Description of Air Pollutants

| Air Pollutant | Averaging Time | California Standard | Federal Standard[a] | Most Relevant Effects from Pollutant Exposure | Properties | Sources |
|---|---|---|---|---|---|---|
| Sulfur dioxide[c] ($SO_2$) | 1 Hour | 0.25 ppm | 0.075 ppm | Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient sulfur dioxide levels. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor. | Sulfur dioxide is a colorless, pungent gas. At levels greater than 0.5 ppm, the gas has a strong odor, similar to rotten eggs. Sulfur oxides ($SO_X$) include sulfur dioxide and sulfur trioxide. Sulfuric acid is formed from sulfur dioxide, which can lead to acid deposition and can harm natural resources and materials. Although sulfur dioxide concentrations have been reduced to levels well below state and federal standards, further reductions are desirable because sulfur dioxide is a precursor to sulfate and $PM_{10}$. | Human-caused sources include fossil-fuel combustion, mineral ore processing, and chemical manufacturing. Volcanic emissions are a natural source of sulfur dioxide. The gas can also be produced in the air by dimethylsulfide and hydrogen sulfide. Sulfur dioxide is removed from the air by dissolution in water, chemical reactions, and transfer to soils and ice caps. The sulfur dioxide levels in the State are well below the maximum standards. |
| | 3 Hour | — | 0.5 ppm | | | |
| | 24 Hour | 0.04 ppm | 0.14 (for certain areas) | | | |
| | Annual | — | 0.030 ppm (for certain areas) | | | |
| Particulate matter ($PM_{10}$) | 24 Hour | 50 µg/m³ | 150 µg/m³ | • Short-term exposure (hours/days): irritation of the eyes, nose, throat; coughing; phlegm; chest tightness; shortness of breath; aggravates existing lung disease, causing asthma attacks and acute bronchitis; those with heart disease can suffer heart attacks and arrhythmias.<br>• Long-term exposure: reduced lung function; chronic bronchitis; changes in lung morphology; death. | Suspended particulate matter is a mixture of small particles that consist of dry solid fragments, droplets of water, or solid cores with liquid coatings. The particles vary in shape, size, and composition. $PM_{10}$ refers to particulate matter that is between 2.5 and 10 microns in diameter (1 micron is one-millionth of a meter). $PM_{2.5}$ refers to particulate matter that is 2.5 microns or less in diameter, about one-thirtieth the size of the average human hair. | Stationary sources include fuel or wood combustion for electrical utilities, residential space heating, and industrial processes; construction and demolition; metals, minerals, and petrochemicals; wood products processing; mills and elevators used in agriculture; erosion from tilled lands; waste disposal; and recycling. Mobile or transportation-related sources are from vehicle exhaust and road dust. Secondary particles form from reactions in the atmosphere. |
| | Mean | 20 µg/m³ | — | | | |
| Particulate matter ($PM_{2.5}$) | 24 Hour | — | 35 µg/m³ | | | |
| | Annual | 12 µg/m³ | 12.0 µg/m³ | | | |
| Visibility-reducing particles | 8 Hour | See note below[d] | | | | |

## Table 1 (cont.): Description of Air Pollutants

| Air Pollutant | Averaging Time | California Standard | Federal Standard[a] | Most Relevant Effects from Pollutant Exposure | Properties | Sources |
|---|---|---|---|---|---|---|
| Sulfates | 24 Hour | 25 µg/m$^3$ | — | (a) Decrease in ventilatory function;<br>(b) aggravation of asthmatic symptoms;<br>(c) aggravation of cardio-pulmonary disease;<br>(d) vegetation damage;<br>(e) degradation of visibility;<br>(f) property damage. | The sulfate ion is a polyatomic anion with the empirical formula $SO_4^{2-}$. Sulfates occur in combination with metal and/or hydrogen ions. Many sulfates are soluble in water. | Sulfates are particulates formed through the photochemical oxidation of sulfur dioxide. In California, the main source of sulfur compounds is combustion of gasoline and diesel fuel. |
| Lead[e] | 30-day | 1.5 µg/m$^3$ | — | Lead accumulates in bones, soft tissue, and blood and can affect the kidneys, liver, and nervous system. It can cause impairment of blood formation and nerve conduction, behavior disorders, mental retardation, neurological impairment, learning deficiencies, and low IQ. | Lead is a solid heavy metal that can exist in air pollution as an aerosol particle component. Leaded gasoline was used in motor vehicles until around 1970. Lead concentrations have not exceeded state or federal standards at any monitoring station since 1982. | Lead ore crushing, lead-ore smelting, and battery manufacturing are currently the largest sources of lead in the atmosphere in the United States. Other sources include dust from soils contaminated with lead-based paint, solid waste disposal, and crustal physical weathering. |
| | Quarter | — | 1.5 µg/m$^3$ | | | |
| | Rolling 3-month average | — | 0.15 µg/m$^3$ | | | |
| Vinyl chloride[e] | 24 Hour | 0.01 ppm | — | Short-term exposure to high levels of vinyl chloride in the air causes central nervous system effects, such as dizziness, drowsiness, and headaches. Epidemiological studies of occupationally exposed workers have linked vinyl chloride exposure to development of a rare cancer, liver angiosarcoma, and have suggested a relationship between exposure and lung and brain cancers. | Vinyl chloride, or chloroethene, is a chlorinated hydrocarbon and a colorless gas with a mild, sweet odor. In 1990, ARB identified vinyl chloride as a toxic air contaminant and estimated a cancer unit risk factor. | Most vinyl chloride is used to make polyvinyl chloride plastic and vinyl products, including pipes, wire and cable coatings, and packaging materials. It can be formed when plastics containing these substances are left to decompose in solid waste landfills. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites. |
| Hydrogen sulfide | 1 Hour | 0.03 ppm | — | High levels of hydrogen sulfide can cause immediate respiratory arrest. It can irritate the eyes and | Hydrogen sulfide ($H_2S$) is a flammable, colorless, poisonous gas that smells like rotten eggs. | Manure, storage tanks, ponds, anaerobic lagoons, and land application sites are the primary |

## Table 1 (cont.): Description of Air Pollutants

| Air Pollutant | Averaging Time | California Standard | Federal Standard[a] | Most Relevant Effects from Pollutant Exposure | Properties | Sources |
|---|---|---|---|---|---|---|
| | | | | respiratory tract and cause headache, nausea, vomiting, and cough. Long exposure can cause pulmonary edema. | | sources of hydrogen sulfide. Anthropogenic sources include the combustion of sulfur-containing fuels (oil and coal). |
| Volatile organic compounds (VOC) | There are no state or federal standards for VOCs because they are not classified as criteria pollutants. | | | Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations because of interference with oxygen uptake. In general, concentrations of VOCs are suspected to cause eye, nose, and throat irritation; headaches; loss of coordination; nausea; and damage to the liver, the kidneys, and the central nervous system. Many VOCs have been classified as toxic air contaminants. Benzene is an example. | Reactive organic gases (ROG), or VOCs, are defined as any compound of carbon—excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate—that participates in atmospheric photochemical reactions. Although there are slight differences in the definition of ROG and VOCs, the two terms are often used interchangeably. | Indoor sources of VOCs include paints, solvents, aerosol sprays, cleansers, tobacco smoke, etc. Outdoor sources of VOCs are from combustion and fuel evaporation. A reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of ozone. VOCs are transformed into organic aerosols in the atmosphere, which contribute to higher $PM_{10}$ and lower visibility. |
| Diesel particulate matter (DPM) | There are no ambient air quality standards for DPM. | | | Some short-term (acute) effects of DPM exposure include eye, nose, throat, and lung irritation, coughs, headaches, light-headedness, and nausea. Studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems. Human studies on the carcinogenicity of DPM demonstrate an increased risk of lung cancer, although the increased risk cannot be clearly | DPM is a source of $PM_{2.5}$—diesel particles are typically 2.5 microns and smaller. Diesel exhaust is a complex mixture of thousands of particles and gases that is produced when an engine burns diesel fuel. Organic compounds account for 80 percent of the total particulate matter mass, which consists of compounds such as hydrocarbons and their derivatives, and polycyclic aromatic hydrocarbons and their derivatives. Fifteen polycyclic aromatic hydrocarbons are confirmed carcinogens, a number of | Diesel exhaust is a major source of ambient particulate matter pollution in urban environments. Typically, the main source of DPM is from combustion of diesel fuel in diesel-powered engines. Such engines are in on-road vehicles such as diesel trucks, off-road construction vehicles, diesel electrical generators, and various pieces of stationary construction equipment. |

## Table 1 (cont.): Description of Air Pollutants

| Air Pollutant | Averaging Time | California Standard | Federal Standard[a] | Most Relevant Effects from Pollutant Exposure | Properties | Sources |
|---|---|---|---|---|---|---|
| | | | | attributed to diesel exhaust exposure. | which are found in diesel exhaust. | |

Notes:

ppm = parts per million (concentration)    µg/m$^3$ = micrograms per cubic meter    Annual = Annual Arithmetic Mean    30-day = 30-day average    Quarter = Calendar quarter

[a] Federal standard refers to the primary national ambient air quality standard, or the levels of air quality necessary, with an adequate margin of safety to protect the public health. All standards listed are primary standards except for 3 Hour $SO_2$, which is a secondary standard. A secondary standard is the level of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[b] To attain the 1-hour $NO_2$ national standard, the 3-year average of the annual 98$^{th}$ percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (ppb) (0.100 ppm).

[c] On June 2, 2010, a new 1-hour $SO_2$ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 $SO_2$ national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[d] Visibility-reducing particles: In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

[e] The ARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[f] The EPA Administrator approved a revised 8-hour ozone standard of 0.07 ppb on October 1, 2015. The new standard went into effect 60 days after publication of the Final Rule in the Federal Register. The Final Rule was published in the Federal Register on October 26, 2015 and became effective on December 28, 2015.

Source of effects, properties, and sources: South Coast Air Quality Management District 2007; California Environmental Protection Agency 2002; California Air Resources Board 2009a; U.S. Environmental Protection Agency 2003, 2010, 2011, 2012, 2018a, 2019, and 2020; National Toxicology Program 2016.

Source of standards: California Air Resources Board 2013a.

Several pollutants listed in Table 1 are not addressed in this analysis. Analysis of lead, hydrogen sulfide, sulfates, and vinyl chloride are not included in this report because no new sources of these pollutant emissions are anticipated with the project. Visibility-reducing particles are not explicitly addressed in this analysis because particulate matter is addressed as $PM_{10}$ and $PM_{2.5}$.

### Toxic Air Contaminants Health Effects

A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. There are no ambient air quality standards for TAC emissions. TACs are regulated in terms of health risks to individuals and populations exposed to the pollutants. The 1990 Clean Air Act Amendments significantly expanded the EPA's authority to regulate hazardous air pollutants. Section 112 of the Clean Air Act lists 187 hazardous air pollutants to be regulated by source category. Authority to regulate these pollutants was delegated to individual states. ARB and local air districts regulate TACs and hazardous air pollutants in California.

Exposures to TACs emissions can have both chronic long-term (over a year or longer) and acute short-term (over a period of hours) health impacts. The TACs of greatest concern are those that cause serious health problems or affect many people. Health problems can include cancer, respiratory irritation, nervous system problems, and birth defects. Some health problems occur very soon after a person inhales a TAC. These immediate effects may be minor, such as watery eyes, or they may be serious, such as life-threatening lung damage. Other health problems may not appear until many months or years after a person's first exposure to the TAC. Cancer is one example of a delayed health problem.

A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. The California Almanac of Emissions and Air Quality—2009 Edition (ARB 2009b) presents the relevant concentration and cancer risk data for the ten TACs that pose the most substantial health risk in California based on available data. The ten TACs are acetaldehyde, benzene, 1.3-butadiene, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, perchloroethylene, and diesel particulate matter (DPM).

Some studies indicate that DPM poses the greatest health risk among the TACs listed above. A 10-year research program (ARB 1998) demonstrated that DPM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic health risk. In addition to increased risk of lung cancer, exposure to diesel exhaust can have other health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause a cough, headaches, lightheadedness, and nausea. Diesel exhaust is a major source of fine particulate pollution as well, and studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems.

DPM differs from other TACs in that it is not a single substance, but a complex mixture of hundreds of substances. Although DPM is emitted by diesel-fueled, internal combustion engines, the composition of the emissions varies, depending on: engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. Unlike the other TACs, however, no ambient monitoring data are available for DPM because no routine measurement method currently exists. The ARB has made preliminary concentration estimates based on a DPM exposure method. This method uses the ARB emissions inventory's $PM_{10}$ database, ambient $PM_{10}$ monitoring data, and the results from several studies to estimate concentrations of DPM.

Health risks attributable to the top 10 TACs listed above are available from the ARB as part of its California Almanac of Emissions and Air Quality. As shown therein for data collected at the First Street air monitoring station in Fresno, cancer risks attributable to all of the listed TACs above with the exception of DPM have declined about 70 percent from the mid-1990s to 2007. Risks associated with DPM emissions are provided only for the year 2000 and have not been updated in the Almanac. Although more recent editions of the Almanac do not provide estimated risk, they do provide emission inventories for DPM for later years. The 2013 Almanac provides emission inventory trends for DPM from 2000 through 2035. The same Almanac reports that DPM emissions were reduced in the SJVAB from 16 tons per day in 2000 to 11 tons per day in 2010, a 31 percent decrease. DPM emissions in the San Joaquin Valley are projected to decrease to 6 tons per day by 2015, a 62 percent reduction from year 2000 levels. ARB predicts a reduction to three tons per day by 2035, which would be an 81 percent reduction from year 2000 levels. Continued implementation of the ARB's Diesel Risk Reduction Plan is expected to provide continued reductions in DPM through 2020 and beyond through regulations on this source (ARB 2013b).

### Asbestos

Asbestos is the name given to a number of naturally occurring fibrous silicate minerals that have been mined for their useful properties such as thermal insulation, chemical and thermal stability, and high tensile strength. The three most common types of asbestos are chrysotile, amosite, and crocidolite. Chrysotile, also known as white asbestos, is the most common type of asbestos found in buildings. Chrysotile makes up approximately 90 to 95 percent of all asbestos contained in buildings in the United States. Exposure to asbestos is a health threat; exposure to asbestos fibers may result in health issues such as lung cancer, mesothelioma (a rare cancer of the thin membranes lining the lungs, chest, and abdominal cavity), and asbestosis (a non-cancerous lung disease that causes scarring of the lungs). Exposure to asbestos can occur during demolition or remodeling of buildings that were constructed prior to the 1977 ban on asbestos for use in buildings. Exposure to naturally occurring asbestos can occur during soil-disturbing activities in areas with deposits present. No naturally occurring asbestos is located near the project site.

## 2.3—Existing Air Quality Conditions

The local air quality can be evaluated by reviewing relevant air pollution concentrations near the project area. Table 2 summarizes 2017 through 2019 published monitoring data, which is the most recent three-year period available. Data was obtained from the closest air monitoring stations with data available. The table displays data from the Hanford S. Irwin Street monitoring station (located approximately 7 miles east of the project site). The data show that during the past few years, the

project area has exceeded the standards for ozone (state and national), $PM_{10}$ (state), and $PM_{2.5}$ (national). The data in the table reflect the concentration of the pollutants in the air, measured using air monitoring equipment. This differs from emissions, which are calculations of a pollutant being emitted over a certain period. No recent monitoring data for Kings County or the San Joaquin Valley Air Basin were available for CO or $SO_2$. Generally, no monitoring is conducted for pollutants that are no longer likely to exceed ambient air quality standards.

## Table 2: Air Quality Monitoring Summary

| Air Pollutant | Averaging Time | Item | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|
| Ozone[1] | 1 Hour | Max 1 Hour (ppm) | **0.106** | **0.108** | **0.093** |
| | | Days > State Standard (0.09 ppm) | 7 | 1 | 0 |
| Ozone[1] | 8 Hour | Max 8 Hour (ppm) | **0.094** | **0.082** | **0.076** |
| | | Days > State Standard (0.07 ppm) | 42 | 30 | 13 |
| | | Days > National Standard (0.070 ppm) | 38 | 29 | 13 |
| Carbon monoxide (CO) | 8 Hour | Max 8 Hour (ppm) | ND | ND | ND |
| | | Days > State Standard (9.0 ppm) | ND | ND | ND |
| | | Days > National Standard (9 ppm) | ND | ND | ND |
| Nitrogen dioxide ($NO_2$)[1] | Annual | Annual Average (ppm) | 0.008 | 0.008 | 0.008 |
| | 1 Hour | Max 1 Hour (ppm) | 0.0569 | 0.0563 | 0.0629 |
| | | Days > State Standard (0.18 ppm) | 0 | 0 | 0 |
| Sulfur dioxide ($SO_2$) | Annual | Annual Average (ppm) | ND | ND | ND |
| | 24 Hour | Max 24 Hour (ppm) | ND | ND | ND |
| | | Days > State Standard (0.04 ppm) | ND | ND | ND |
| Inhalable coarse particles ($PM_{10}$)[1] | Annual | Annual Average ($\mu g/m^3$) | 49.9 | 47.3 | 44.8 |
| | 24 hour | 24 Hour ($\mu g/m^3$) | **298.4** | **174.2** | **211.7** |
| | | Days > State Standard (50 $\mu g/m^3$) | 122.0 | 113.5 | 104 |
| | | Days > National Standard (150 $\mu g/m^3$) | 1.0 | 6.1 | 6.6 |
| Fine particulate matter ($PM_{2.5}$)[1] | Annual | Annual Average ($\mu g/m^3$) | **17.1** | **17.7** | **12.1** |
| | 24 Hour | 24 Hour ($\mu g/m^3$) | **113.4** | **107.8** | **48.2** |
| | | Days > National Standard (35 $\mu g/m^3$) | 33.8 | 31 | 21.0 |

Notes:
> = exceed   ppm = parts per million   $\mu g/m^3$ = micrograms per cubic meter
ID = insufficient data   ND = no data   max = maximum
**Bold** = exceedance
State Standard = California Ambient Air Quality Standard
National Standard = National Ambient Air Quality Standard
[1] Hanford S. Irwin St. Monitoring Station
Source: California Air Resources Board 2020a.

The health impacts of the various air pollutants of concern can be presented in a number of ways. The clearest of these is comparable with the state and federal ozone standards. If concentrations are below the standard, it is safe to say that no significant health impact would occur to anyone. When concentrations exceed the standard, impacts will vary based on the amount by which the standard is exceeded. The EPA developed the Air Quality Index (AQI) as an easy-to-understand measure of health impacts compared with concentrations in the air. Table 3 provides a description of the health impacts of ozone at different concentrations.

### Table 3: Air Quality Index and Health Effects from Ozone

| Air Quality Index/ 8-hour Ozone Concentration | Health Effects Description |
|---|---|
| **AQI 51–100—Moderate** | **Sensitive Groups:** Children and people with asthma are the groups most at risk. |
| Concentration 55–70 ppb | **Health Effects Statements:** Unusually sensitive individuals may experience respiratory symptoms. |
| | **Cautionary Statements:** Unusually sensitive people should consider limiting prolonged outdoor exertion. |
| **AQI 101–150—Unhealthy for Sensitive Groups** | **Sensitive Groups:** Children and people with asthma are the groups most at risk. |
| Concentration 71–85 ppb | **Health Effects Statements:** Increasing likelihood of respiratory symptoms and breathing discomfort in active children and adults and people with respiratory disease, such as asthma. |
| | **Cautionary Statements:** Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion. |
| **AQI 151–200—Unhealthy** | **Sensitive Groups:** Children and people with asthma are the groups most at risk. |
| Concentration 86–105 ppb | **Health Effects Statements:** Greater likelihood of respiratory symptoms and breathing difficulty in active children and adults and people with respiratory disease, such as asthma; possible respiratory effects in general population. |
| | **Cautionary Statements:** Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion. |
| **AQI 201–300—Very Unhealthy** | **Sensitive Groups:** Children and people with asthma are the groups most at risk. |
| Concentration 106–200 ppb | **Health Effects Statements:** Increasingly severe symptoms and impaired breathing likely in active children and adults and people with respiratory disease, such as asthma; increasing likelihood of respiratory effects in general population. |
| | **Cautionary Statements:** Active children and adults, and people with respiratory disease, such as asthma, should avoid all outdoor exertion; everyone else, especially children, should limit outdoor exertion. |
| Source: Air Now 2020. | |

The AQI for the 8-hour ozone standard is based on the current NAAQS of 70 parts per billion (ppb). Based on the AQI scale for the 8-hour ozone standard, the project area experienced three days in the last three years that would be categorized as very unhealthy (AQI 201–250), and as many as 77 days that were unhealthy (AQI 151–200) or unhealthy for sensitive groups (AQI 101–150), violating the 70-ppb standard as measured at the Hanford S. Irwin Street monitoring station. The highest reading was 94 parts per billion (ppb) in 2017 (AQI 172), compared with the 105-ppb cutoff point for unhealthy (AQI 200). The most days over the standard were 38 days in 2017.

The other nonattainment pollutant of concern is $PM_{2.5}$. An AQI of 100 or lower is considered moderate and would be triggered by a 24-hour average concentration of 12.1 to 35.4 µg/m$^3$. An AQI of 101 to 105 or 35.5-55.4 µg/m$^3$ is considered unhealthful for sensitive groups. When concentrations reach this amount, it is considered an exceedance of the federal $PM_{2.5}$ standard. The monitoring station nearest the project exceeded the standard on approximately 86 days in the three-year period spanning from 2017 to 2019. The highest number of exceedances was recorded in 2017 with 34 days over the standard. People with respiratory or heart disease, the elderly, and children are the groups most at risk. Unusually sensitive people should consider reducing prolonged or heavy exertion. The AQI of 151 to 200 is classified as unhealthy for everyone. This AQI classification is triggered when $PM_{2.5}$ concentration ranges from 55.4 to 150.4 µg/m$^3$. At this concentration, there is increasing likelihood of respiratory symptoms in sensitive individuals, aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease, and in the elderly. People with respiratory or heart disease, the elderly, and children should limit prolonged exertion. Everyone else should reduce prolonged or heavy exertion. The highest concentration recorded at the Hanford S. Irwin Street monitoring station in the last three years was 113.4 µg/m$^3$ (AQI 181) in 2017. At this concentration the air quality is unhealthy for everyone. At this AQI, increased aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly, and increased respiratory effects in general population would occur. People with respiratory or heart disease, the elderly, and children should avoid prolonged exertion; everyone else should limit prolonged exertion when the AQI exceeds this level. The relationship of the AQI to health effects is shown in Table 4.

### Table 4: Air Quality Index and Health Effects of Particulate Pollution

| Air Quality Index/ $PM_{2.5}$ Concentration | Health Effects Description |
|---|---|
| **AQI 51–100—Moderate**<br><br>Concentration 12.1–35.4 µg/m$^3$ | **Sensitive Groups:** Some people who may be unusually sensitive to particle. |
| | **Health Effects Statements:** Unusually sensitive people should consider reducing prolonged or heavy exertion. |
| | **Cautionary Statements:** Unusually sensitive people: Consider reducing prolonged or heavy exertion. Watch for symptoms such as coughing or shortness of breath. These are signs to take it easier. |
| **AQI 101–150—Unhealthy for Sensitive Groups**<br><br>Concentration 35.5–55.4 µg/m$^2$ | **Sensitive Groups:** Sensitive groups include people with heart or lung disease, older adults, children, and teenagers. |
| | **Health Effects Statements:** Increasing likelihood of respiratory symptoms in sensitive individuals, aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease, and the elderly. |

### Table 4 (cont.): Air Quality Index and Health Effects of Particulate Pollution

| Air Quality Index/ $PM_{2.5}$ Concentration | Health Effects Description |
|---|---|
| | If you have heart disease: Symptoms such as palpitations, shortness of breath, or unusual fatigue may indicate a serious problem. If you have any of these, contact your health care provider. |
| **AQI 151–200—Unhealthy**<br>Concentration 55.5–150.4 µg/m$^3$ | **Sensitive Groups:** Everyone |
| | **Health Effects Statements:** Increased aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly; increased respiratory effects in general population. |
| | **Cautionary Statements:** Sensitive groups: Avoid prolonged or heavy exertion. Consider moving activities indoors or rescheduling. Everyone else: Reduce prolonged or heavy exertion. Take more breaks during outdoor activities. |
| **AQI 201–300—Very Unhealthy**<br>Concentration 150.5–250.4 µg/m$^3$ | **Sensitive Groups:** Everyone |
| | **Health Effects Statements:** Significant aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly; significant increase in respiratory effects in general population. |
| | **Cautionary Statements:** Sensitive groups: Avoid all physical activity outdoors. Move activities indoors or reschedule to a time when air quality is better. Everyone else: Avoid prolonged or heavy exertion. Consider moving activities indoors or rescheduling to a time when air quality is better. |
| Source: Air Now 2020. | |

## 2.3.1 - Attainment Status

The EPA and the ARB designate air basins where ambient air quality standards are exceeded as “nonattainment” areas. If standards are met, the area is designated an “attainment” area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered “unclassified.” National nonattainment areas are further designated marginal, moderate, serious, severe, or extreme as a function of deviation from standards.

Each standard has a different definition, or “form” of what constitutes attainment, based on specific air quality statistics. For example, the federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the federal annual $PM_{2.5}$ standard is met if the three-year average of the annual average $PM_{2.5}$ concentration is less than or equal to the standard.

The current attainment designations for the Air Basin are shown in Table 5. The Air Basin is designated nonattainment for ozone, $PM_{10}$, and $PM_{2.5}$.

### Table 5: San Joaquin Valley Air Basin Attainment Status

| Pollutant | State Status | National Status |
|---|---|---|
| Ozone—One Hour | Nonattainment/Severe | No Standard |
| Ozone—Eight Hour | Nonattainment | Nonattainment/Extreme |
| Carbon monoxide | Attainment/Unclassified | Merced, Madera, and Kings Counties are unclassified; others are in Attainment |
| Nitrogen dioxide | Attainment | Attainment/Unclassified |
| Sulfur dioxide | Attainment | Attainment/Unclassified |
| $PM_{10}$ | Nonattainment | Attainment |
| $PM_{2.5}$ | Nonattainment | Nonattainment |
| Lead | Attainment | No Designation/Classification |
| Source of State status: California Air Resources Board (ARB 2013c).<br>Source of National status: U.S. Environmental Protection Agency (EPA 2016a).<br>Source of additional status information (SJVAPCD 2017a). | | |

## 2.4—Air Quality Plans and Regulations

Air pollutants are regulated at the national, state, and air basin or county level, and each agency has a different level of regulatory responsibility: the EPA regulates at the national level, the ARB at the state level, and the SJVAPCD at the air basin level.

The EPA is responsible for national and interstate air pollution issues and policies. The EPA sets national vehicle and stationary source emission standards, oversees approval of all State Implementation Plans, provides research and guidance for air pollution programs, and sets National Ambient Air Quality Standards—also known as the federal standards described earlier.

A State Implementation Plan (SIP) is a document prepared by each state describing existing air quality conditions and measures that will be followed to attain and maintain federal standards. The SIP for the State of California is administered by the ARB, which has overall responsibility for statewide air quality maintenance and air pollution prevention. California's SIP incorporates individual federal attainment plans for regional air districts; specifically, an air district prepares their federal attainment plan, which is sent to ARB to be approved and incorporated into the California State Implementation Plan. Federal attainment plans include the technical foundation for understanding air quality (e.g., emission inventories and air quality monitoring), control measures and strategies, and enforcement mechanisms. The ARB then submits the SIP to the EPA for approval. After reviewing submitted SIPs, the EPA proposes to approve or disapprove all or part of each plan. The public has an opportunity to comment on the EPA's proposed action. The EPA considers public input before taking final action on a state's plan. If the EPA approves all or part of a SIP, those control measures are enforceable in federal court. If a state fails to submit an approvable plan or if the EPA disapproves a plan, the EPA is required to develop a federal implementation plan (FIP). The SIP approval process often takes several years. The most recent federally approved attainment plans for the SJVAPCD are the 2007 8-Hour Ozone Attainment Plan and the 2012 $PM_{2.5}$ Plan for the 2006 $PM_{2.5}$ standard.

Areas designated nonattainment must develop air quality plans and regulations to achieve standards by specified dates, depending on the severity of the exceedances. For much of the country, implementation of federal motor vehicle standards and compliance with federal permitting requirements for industrial sources are adequate to attain air quality standards on schedule. For many areas of California, however, additional state and local regulation is required to achieve the standards. Regulations adopted by California are described below.

## 2.4.1 - California Regulations

### Low-Emission Vehicle Program

The ARB first adopted Low-Emission Vehicle (LEV) program standards in 1990. These first LEV standards ran from 1994 through 2003. LEV II regulations, running from 2004 through 2010, represent continuing progress in emission reductions. As the State's passenger vehicle fleet continues to grow and more sport utility vehicles and pickup trucks are used as passenger cars rather than work vehicles, the more stringent LEV II standards were adopted to provide reductions necessary for California to meet federally mandated clean air goals outlined in the 1994 State Implementation Plan. In 2012, ARB adopted the LEV III amendments to California's LEV regulations. These amendments, also known as the Advanced Clean Car Program include more stringent emission standards for model years 2017 through 2025 for both criteria pollutants and GHGs for new passenger vehicles (ARB 2012a).

### On-Road Heavy-Duty Vehicle Program

The ARB has adopted standards for emissions from various types of new on-road heavy-duty vehicles. Section 1956.8, Title 13, California Code of Regulations contains California's emission standards for on-road heavy-duty engines and vehicles, as well as test procedures. ARB has also adopted programs to reduce emissions from in-use heavy-duty vehicles including the Heavy-Duty Diesel Vehicle Idling Reduction Program, the Heavy-Duty Diesel In-Use Compliance Program, the Public Bus Fleet Rule and Engine Standards, and the School Bus Program and others (ARB 2013b).

The regulation applies to nearly all privately and federally owned diesel-fueled trucks and buses and to privately and publicly owned school buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds. The regulation provides a variety of flexibility options tailored to fleets operating low-use vehicles, fleets operating in selected vocations like agricultural and construction, and small fleets of three or fewer trucks (ARB 2015b).

### ARB Truck and Bus Regulation

The latest amendments to the Truck and Bus regulation became effective on December 31, 2014. The amended regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Newer heavier trucks and buses must meet PM filter requirements beginning January 1, 2012. Lighter and older heavier trucks must be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent.

The regulation applies to nearly all privately and federally owned diesel-fueled trucks and buses and to privately and publicly owned school buses with a gross vehicle weight rating (GVWR) greater than

14,000 pounds. The regulation provides a variety of flexibility options tailored to fleets operating low-use vehicles, fleets operating in selected vocations like agricultural and construction, and small fleets of three or fewer trucks (ARB 2015a).

### Advanced Clean Truck Regulation

The Advanced Clean Trucks regulation was approved on June 25, 2020 and has two main components, a manufacturers ZEV sales requirement and a one-time reporting requirement for large entities and fleets. Promoting the development and use of advanced clean trucks will help ARB achieve its emission reduction strategies as outlined in the SIP, Sustainable Freight Action Plan, Senate Bill (SB) 350, and Assembly Bill (AB) 32.

The proposed regulation has two components: a manufacturer sales requirement and a reporting requirement.

- Zero-emission truck sales: Manufacturers who certify Class 2b-8 chassis or complete vehicles with combustion engines would be required to sell zero-emission trucks as an increasing percentage of their annual California sales from 2024 to 2035. By 2035, zero-emission truck/chassis sales would need to be 55% of Class 2b–3 truck sales, 75% of Class 4–8 straight truck sales, and 40% of truck tractor sales.
- Company and fleet reporting: Large employers—including retailers, manufacturers, brokers, and others—would be required to report information about shipments and shuttle services. Fleet owners (those with 50 or more trucks) would be required to report about their existing fleet operations. This information would help identify future strategies to ensure that fleets purchase available zero-emission trucks and place them in service where suitable to meet their needs (ARB 2020b).

### ARB Regulation for In-Use Off-Road Diesel Vehicles

On July 26, 2007, the ARB adopted a regulation to reduce DPM and nitrous oxide ($NO_X$) emissions from in-use (existing) off-road heavy-duty diesel vehicles in California. Such vehicles are used in construction, mining, and industrial operations. The regulation limits idling to no more than five consecutive minutes, requires reporting and labeling, and requires disclosure of the regulation upon vehicle sale. The ARB is enforcing that part of the rule with fines up to $10,000 per day for each vehicle in violation. Performance requirements of the rule are based on a fleet's average $NO_X$ emissions, which can be met by replacing older vehicles with newer, cleaner vehicles or by applying exhaust retrofits. The regulation was amended in 2010 to delay the original timeline of the performance requirements, making the first compliance deadline January 1, 2014 for large fleets (over 5,000 horsepower), 2017 for medium fleets (2,501–5,000 horsepower), and 2019 for small fleets (2,500 horsepower or less).

### ARB Regulation for Consumer Products

The ARB Consumer Products Regulation was last amended in January 2015. The ARB regulates the VOC content of a wide variety of consumer products sold and manufactured in California. The purpose of the regulation is to reduce the emission of ozone precursors, TACs, and GHG emissions in products that are used by homes and businesses. The regulated products include but are not limited

to solvents, adhesives, air fresheners, soaps, aromatic compounds, windshield cleaners, charcoal lighter, dry cleaning fluids, floor polishes, and general cleaners and degreasers (ARB 2015b)

### ARB Airborne Toxic Control Measure for Asbestos

In July 2001, the ARB approved an Air Toxic Control Measure for construction, grading, quarrying, and surface mining operations to minimize emissions of naturally occurring asbestos. The regulation requires application of best management practices to control fugitive dust in areas known to have naturally occurring asbestos and requires notification to the local air district prior to commencement of ground-disturbing activities. The measure establishes specific testing, notification and engineering controls prior to grading, quarrying, or surface mining in construction zones where naturally occurring asbestos is located on projects of any size. There are additional notification and engineering controls at work sites larger than one acre in size. These projects require the submittal of a “Dust Mitigation Plan” and approval by the air district prior to the start of a project.

Construction sometimes requires the demolition of existing buildings where construction occurs. The project includes no demolition. Asbestos is also found in a natural state, known as naturally occurring asbestos. Exposure and disturbance of rock and soil that naturally contain asbestos can result in the release of fibers into the air and consequent exposure to the public. Asbestos most commonly occurs in ultramafic rock that has undergone partial or complete alteration to serpentine rock (serpentinite) and often contains chrysotile asbestos. In addition, another form of asbestos, tremolite, can be found associated with ultramafic rock, particularly near faults. Sources of asbestos emissions include unpaved roads or driveways surfaced with ultramafic rock, construction activities in ultramafic rock deposits, or rock quarrying activities where ultramafic rock is present.

The ARB has an Air Toxic Control Measure for construction, grading, quarrying, and surface mining operations, requiring the implementation of mitigation measures to minimize emissions of asbestos-laden dust. The measure applies to road construction and maintenance, construction and grading operations, and quarries and surface mines when the activity occurs in an area where naturally occurring asbestos is likely to be found. Areas are subject to the regulation if they are identified on maps published by the Department of Conservation as ultramafic rock units or if the Air Pollution Control Officer or owner/operator has knowledge of the presence of ultramafic rock, serpentine, or naturally occurring asbestos on the site. The measure also applies if ultramafic rock, serpentine, or asbestos is discovered during any operation or activity. Review of the Department of Conservation maps indicates that no ultramafic rock has been found near the southeast Fresno area.

### Diesel Risk Reduction Plan

The ARB’s Diesel Risk Reduction Plan has led to the adoption of new state regulatory standards for all new on-road, off-road, and stationary diesel-fueled engines and vehicles to reduce DPM emissions by about 90 percent overall from year 2000 levels. The projected emission benefits associated with the full implementation of this plan, including federal measures, are reductions in DPM emissions and associated cancer risks of 75 percent by 2010, and 85 percent by 2020 (ARB 2000).

## 2.4.2 - San Joaquin Valley Air Pollution Control District

The District is responsible for controlling emissions primarily from stationary sources. The District, in coordination with the eight countywide transportation agencies, is also responsible for developing,

updating, and implementing air quality attainment plans for the Air Basin. The District also has roles under CEQA.

## Ozone Plans

The Air Basin is designated nonattainment of state and federal health-based air quality standards for ozone. To meet Clean Air Act requirements for the one-hour ozone standard, the District adopted an Extreme Ozone Attainment Demonstration Plan in 2004, with an attainment date of 2010. Although the EPA revoked the federal 1-hour ozone standard effective June 15, 2005 and replaced it with an 8-hour standard, the requirement to submit a plan for that standard remained in effect for the San Joaquin Valley.

The planning requirements for the 1-hour plan remain in effect until replaced by a federal 8-hour ozone attainment plan. On March 8, 2010, the EPA approved the 2004 Extreme Ozone Attainment Demonstration Plan, including revisions to the plan, effective April 7, 2010. However, the Air Basin failed to attain the standard in 2010 and was subject to a $29 million Clean Air Act penalty. The penalty is being collected through an additional $12 motor vehicle registration surcharge for each passenger vehicle registered in the Air Basin that will be applied to pollution reduction programs in the region. The District also instituted a more robust ozone episodic program to reduce emissions on days with the potential to exceed the ozone standards. On July 18, 2016, the EPA published in the Federal Register a final action determining that the San Joaquin Valley has attained the 1-hour ozone national ambient air quality standard. This determination is based on the most recent three-year period (2012-2014) of sufficient, quality-assured, and certified data. The penalty fees remain in place pending submittal of a demonstration that the San Joaquin Valley will maintain the 1-hour standard for 10 years (EPA 2016b).

The EPA originally classified the Air Basin as serious nonattainment for the 1997 federal 8-hour ozone standard with an attainment date of 2013. On April 30, 2007, the District's Governing Board adopted the 2007 Ozone Plan, which contained analysis showing a 2013 attainment target to be infeasible. The 2007 Ozone Plan details the plan for achieving attainment on schedule with an "extreme nonattainment" deadline of 2024. At its adoption of the 2007 Ozone Plan, the District also requested a reclassification to extreme nonattainment. ARB approved the plan in June 2007, and the EPA approved the request for reclassification to extreme nonattainment on April 15, 2010.

The 2007 Ozone Plan contains measures to reduce ozone and particulate matter precursor emissions to bring the Basin into attainment with the federal 8-hour ozone standard. The 2007 Ozone Plan calls for a 75 percent reduction of $NO_X$ and a 25 percent reduction of reactive organic gases (ROG). Figure 4 displays the anticipated $NO_X$ reductions attributed in the 2007 Ozone Plan (Source: 2007 Ozone Plan). The plan, with innovative measures and a "dual path" strategy, assures expeditious attainment of the federal 8-hour ozone standard for all Air Basin residents. The District Governing Board adopted the 2007 Ozone Plan on April 30, 2007. The ARB approved the plan on June 14, 2007. The 2007 Ozone Plan requires yet to be determined "Advanced Technology" to achieve additional reductions after 2021, in order to attain the standard at all monitoring stations in the Air Basin by 2024 as allowed for areas designated extreme nonattainment by the federal Clean Air Act.

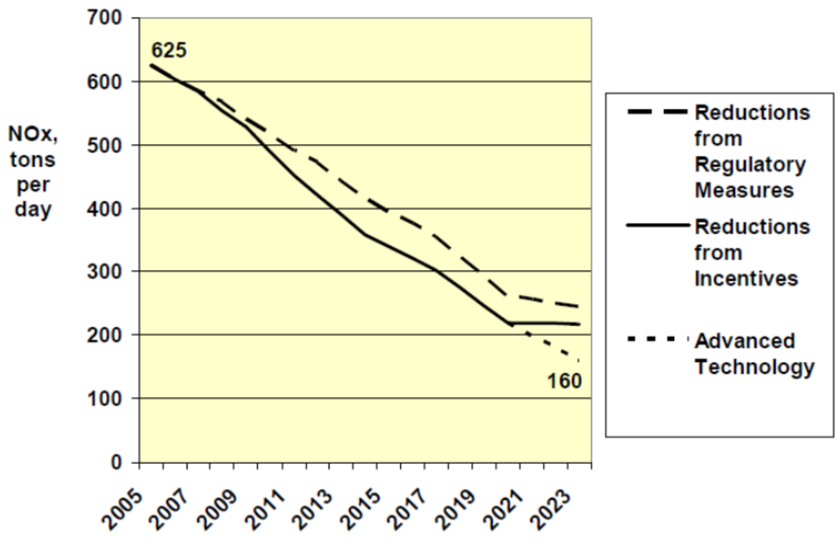
The Air Basin is designated an extreme ozone nonattainment area for the EPA's 2008 8-hour ozone standard of 75 ppb. The District's Governing Board approved the 2016 Plan for the 2008 8-Hour

Ozone Standard on June 16, 2016. The ARB approved the attainment demonstration plan for the San Joaquin Valley on July 21, 2016 and transmitted the plan to EPA on August 24, 2016. The comprehensive strategy in this plan will reduce $NO_X$ emissions by over 60 percent between 2012 and 2031, and will bring the San Joaquin Valley into attainment of the EPA's 2008 8-hour ozone standard as expeditiously as practicable, no later than December 31, 2031. The 2016 Ozone Plan predicts attainment of the 2008 standard by 2031 (SJVAPCD 2018a). To ensure that the plan is approvable with the necessary contingencies, the plan includes a "Black Box" that will require implementation of new advanced technologies and controls prior to the 2031 deadline.

The EPA Administrator signed the Final Rule revising the 8-hour ozone standard to 70 ppm on October 1, 2015. The new standard will require the SJVAPCD to prepare a new attainment to achieve the more stringent emission level within 20 years from the effective date of designation (EPA 2018b).

State ozone standards do not have an attainment deadline but require implementation of all feasible measures to achieve attainment at the earliest date possible. This is achieved through compliance with the federal deadlines and control measure requirements.

**Figure 4: San Joaquin Valley $NO_X$ Emissions Forecast**




## Particulate Matter Plans

The Air Basin was designated nonattainment of state and federal health-based air quality standards for $PM_{10}$. The Air Basin is also designated nonattainment of state and federal standards for $PM_{2.5}$.

To meet Clean Air Act requirements for the $PM_{10}$ standard, the District adopted a $PM_{10}$ Attainment Demonstration Plan (Amended 2003 $PM_{10}$ Plan and 2006 $PM_{10}$ Plan), which has an attainment date of 2010. The District adopted the 2007 $PM_{10}$ Maintenance Plan in September 2007 to assure the San Joaquin Valley's continued attainment of the EPA's $PM_{10}$ standard. The EPA designated the valley as an attainment/maintenance area for $PM_{10}$ on September 25, 2008. Although the San Joaquin Valley has exceeded the standard since then, those days were considered exceptional events that are not considered a violation of the standard for attainment purposes.

The 2008 $PM_{2.5}$ Plan builds upon the comprehensive strategy adopted in the 2007 Ozone Plan to bring the Air Basin into attainment of the 1997 national standards for $PM_{2.5}$. The EPA has identified $NO_X$ and $SO_2$as precursors that must be addressed in air quality plans for the 1997 $PM_{2.5}$ standards. The 2008 $PM_{2.5}$ Plan is a continuation of the District's strategy to improve the air quality in the Air Basin. The EPA issued final approval of the 2008 $PM_{2.5}$ Plan on November 9, 2011, which became effective on January 9, 2012. The EPA approved the emissions inventory, the reasonably available control measures/reasonably available control technology demonstration, reasonable further progress demonstration, attainment demonstration and associated air quality modeling, and the transportation conformity motor vehicle emissions budgets. The EPA also granted California's request to extend the attainment deadline for the San Joaquin Valley to April 5, 2015 and approved commitments to measures and reductions by the District and the ARB. Finally, it disapproved the State Implementation Plan's contingency provisions and issued a protective finding for transportation conformity determinations.

In December 2012, the District adopted the 2012 $PM_{2.5}$ Plan to bring the San Joaquin Valley into attainment of the EPA's 2006 24-hour $PM_{2.5}$ standard of 35 $\mu g/m^3$. The ARB approved the District's 2012 $PM_{2.5}$ Plan for the 2006 standard at a public hearing on January 24, 2013 (SJVAPCD 2012). This plan seeks to bring the Valley into attainment with the standard by 2019, with the expectation that most areas will achieve attainment before that time.

The 2015 Plan for the 1997 $PM_{2.5}$ Standard approved by the District Governing Board on April 16, 2015—will bring the Valley into attainment of the EPA's 1997 $PM_{2.5}$ standard as expeditiously as practicable, but no later than December 31, 2020. The plan was required to request reclassification to Serious nonattainment and to extend the attainment date from 2018 to 2020 (SJVAPCD 2015b).

The 2016 Moderate Area Plan for the 2012 $PM_{2.5}$ Standard was adopted on September 15, 2016. This plan includes an attainment impracticability demonstration and request for reclassification of the Valley from Moderate nonattainment to Serious nonattainment (SJVAPCD 2017b).

The SJVAPCD adopted the 2018 Plan for the 1997, 2006, and 2012 $PM_{2.5}$ Standards on November 15, 2018. This plan provides a combined strategy to address the EPA federal 1997 annual $PM_{2.5}$ standard of 15 $\mu g/m^3$ and 24-hour $PM_{2.5}$ standard of 65 $\mu g/m^3$; the 2006 24-hour $PM_{2.5}$ standard of 35 $\mu g/m^3$; and the 2012 annual $PM_{2.5}$ standard of 12 $\mu g/m^3$. This plan demonstrates attainment of the federal $PM_{2.5}$ standards as expeditiously as practicable (SJVAPCD 2018b).

### SJVAPCD Rules and Regulations

The SJVAPCD rules and regulations that may apply to projects that will occur during buildout of the project include but are not limited to the following:

**Rule 4102—Nuisance.** The purpose of this rule is to protect the health and safety of the public, and applies to any source operation that emits or may emit air contaminants or other materials. This rule is enforced on a complaint basis.

**Rule 4601—Architectural Coatings.** The purpose of this rule is to limit Volatile Organic Compounds (VOC) emissions from architectural coatings. Emissions are reduced by limits on VOC content and

providing requirements on coatings storage, cleanup, and labeling. Only compliant components are available for purchase in the San Joaquin Valley.

**Rule 4641—Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations.** The purpose of this rule is to limit VOC emissions from asphalt paving and maintenance operations. If asphalt paving will be used, then the paving operations will be subject to Rule 4641. This regulation is enforced on the asphalt provider

**Rule 4901—Wood-Burning Fireplaces and Wood-Burning Heaters.** The purposes of this rule are to limit emissions of carbon monoxide and particulate matter from wood-burning fireplaces, wood-burning heaters, and outdoor wood-burning devices, and to establish a public education program to reduce wood-burning emissions. All development that includes wood-burning devices are subject to this rule.

**Rule 4902—Residential Water Heaters.** In 2009, the District amended Rule 4902 to strengthen the rule by lowering the limit to 10 nanograms per joule (ng/J) for new or replacement water heaters, and to a limit of 14 ng/J for instantaneous water heaters. Retailer compliance dates ranged from 2010 to 2012, depending on the unit type.

**Regulation VIII—Fugitive $PM_{10}$ Prohibitions.** Rules 8011–8081 are designed to reduce $PM_{10}$ emissions (predominantly dust/dirt) generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and trackout, etc. All development projects that involve soil disturbance are subject to at least one provision of the Regulation VIII series of rules.

**Rule 9510—Indirect Source Review.** This rule reduces the impact of $NO_X$ and $PM_{10}$ emissions from growth within the Air Basin. The rule places application and emission reduction requirements on development projects meeting applicability criteria in order to reduce emissions through on-site mitigation, off-site District-administered projects, or a combination of the two. This project is subject to Rule 9510 because it would develop more than 50 residential dwelling units.

## CEQA

The District has three roles under CEQA:

1. **Lead Agency:** Responsible for preparing environmental analyses for its own projects (adoption of rules, regulations, or plans) or permit projects filed with the District where the District has primary approval authority over the project.
2. **Responsible Agency:** The discretionary authority of a responsible agency is more limited than a lead agency; having responsibility for mitigating or avoiding only the environmental effects of those parts of the project which it decides to approve, carry out, or finance. The District defers to the lead agency for preparation of environmental documents for land use projects that also have discretionary air quality permits, unless no document is prepared by the lead agency and potentially significant impacts related to the permit are possible. The District regularly submits comments on documents prepared by lead agencies to ensure that District concerns are addressed.

3. **Commenting Agency:** The District reviews and comments on air quality analyses prepared by other public agencies (such as the project).

The District also provides guidance and thresholds for CEQA air quality and GHG analyses. The result of this guidance, as well as state regulations to control air pollution, is an overall improvement in the Air Basin. In particular, the District's 2015 GAMAQI states the following:

1. The District's Air Quality Attainment Plans include measures to promote air quality elements in county and city general plans as one of the primary indirect source programs. The general plan is the primary long-range planning document used by cities and counties to direct development. Since air districts have no authority over land use decisions, it is up to cities and counties to ensure that their general plans help achieve air quality goals. Section 65302.1 of the California Government Code requires cities and counties in the San Joaquin Valley to amend appropriate elements of their general plans to include data, analysis, comprehensive goals, policies, and feasible implementation strategies to improve air quality in their next housing element revisions.
2. The Air Quality Guidelines for General Plans (AQGGP), adopted by the District in 1994 and amended in 2005, is a guidance document containing goals and policy examples that cities and counties may want to incorporate into their General Plans to satisfy Section 65302.1. When adopted in a general plan and implemented, the suggestions in the AQGGP can reduce vehicle trips and miles traveled and improve air quality. The specific suggestions in the AQGGP are voluntary. The District strongly encourages cities and counties to use their land use and transportation planning authority to help achieve air quality goals by adopting the suggested policies and programs.

## 2.4.3 - Local

The City of Lemoore 2030 General Plan was adopted in May 2008 (City of Lemoore 2008). The City's applicable air quality goals and policies from the Air Quality section are listed below.

### City of Lemoore Air Quality Goals and Policies

The General Plan lists the following policies from the Conservation and Open Space chapter that are supportive of improved air quality:

#### *Guiding Policies*

- **COS-G-12** Make air quality a priority in land use planning by implementing emissions reduction efforts targeting mobile sources, stationary sources and construction related sources.
- **COS-G-13** Minimize exposure to toxic air pollutant emissions and noxious odors from industrial, manufacturing and processing facilities.
- **COS-G-14** Utilize diverse and creative mitigation approaches to manage remaining levels of air pollution that cannot be reduced or avoided.

#### *Implementing Policies*

- **COS-I-41** Amend the Zoning Ordinance to prohibit locating new "sensitive receptor" uses—hospitals, residential care facilities and child care facilities—within:

  - 500 feet of a freeway, urban roads carrying 100,000 vehicles per day, or rural roads carrying 50,000 vehicles per day.
  - 1,000 feet of a distribution center (that accommodates more than 100 trucks a day, more than 40 trucks with operating transport refrigeration units (TRUs) a day, or where TRU operation exceeds 300 hours per week).
  - 300 feet of any dry-cleaning operation that uses toxic chemicals. For operations with two or more machines, provide 500 feet. For operations with three or more machines, consult your local air district.
  - 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons or more per year).
- **COS-I-42** Conforming to the SJVAPCD Fugitive Dust Rule, require developers to use best management practices (BMPs) to reduce particulate emission as a condition of approval for subdivision maps, site plans and all grading permits. BMPs include:
  - During clearing, grading, earth-moving or excavation operations, fugitive dust emissions shall be controlled by regular watering, paving of construction roads, or other dust-preventive measures;
  - All materials excavated or graded shall be either sufficiently watered or covered by canvas or plastic sheeting to prevent excessive amounts of dust;
  - All materials transported off-site shall be either sufficiently watered or covered by canvas or plastic sheeting to prevent excessive amounts of dust;
  - All motorized vehicles shall have their tires watered before exiting a construction site;
  - The area disturbed by demolition, clearing, grading, earth-moving, or excavation shall be minimized at all times; and
  - All construction-related equipment shall be maintained in good working order to reduce exhaust.
- **COS-I-43** Enact a wood-burning ordinance compliant with District Rule 4901 that:
  - Regulates the installation of EPA-certified wood heaters or approved woodburning appliances in new developments or replacements;
  - Lists permitted and prohibited fuels; and Describes a "No Burn" policy on days when the air quality is poor.
- **COS-I-45** Utilize more plants and trees in public area landscaping, focusing on those that are documented as more efficient pollutant absorbers.
- **COS-I-46** Establish a Clean Air Awards Program to acknowledge outstanding effort and to educate the public about the linkages between land use, transportation and air quality.
- **COS-I-47** Coordinate air quality planning efforts and CEQA review of discretionary projects with potential for causing adverse air quality impacts with other local, regional and State agencies.

  The City will work with the San Joaquin Valley Air Pollution Control District on parallel initiatives for air quality, so programs are complementary and uniform wherever possible.
- **COS-I-48** Educate employees and department managers about sustainability with a focus on specific operational changes that can be made to reduce greenhouse gas emissions, such as fuel-efficient driving and reducing energy use at work.
- **COS-I-49** Require tenants of all new development within one mile of industrial land uses to record odor easements attesting to the presence of nearby industry and acknowledging the right of said industry to emit odors that are not a threat to human health.

The following air quality supportive policies are from the General Plan Circulation chapter:

- **C-I-4** Develop a multi-modal transit system map integrating bicycle, public transportation, pedestrian and vehicle linkages within the City to ensure circulation gaps are being met. Safe Routes to School and any necessary related improvements will also be shown on this map, and costs and priorities indicated based on need.
- **C-I-5** Use traffic calming measures to reduce speeds in existing and future residential areas. Traffic calming measures may include, but are not limited to:
  - Reducing curb-to-curb pavement widths to the minimum necessary to ensure traffic flow and safety;
  - Allowing on-street parking where possible;
  - Providing generous street tree plantings and other vegetation;
  - Building corner bulb-outs and intersection roundabouts;
  - Allowing for curvilinear street design; and
  - Installing, where appropriate, specific traffic calming features, such as bulb-outs and medians.

### *C-G-1 GUIDING POLICIES*

- **C-G-2** Promote improved transit service and the development and use of park-and-ride facilities for commuters.

### *C-G-3 IMPLEMENTING ACTIONS*

- **C-I-1** Coordinate with Caltrans and Kings Area Rural Transit to identify and implement Park & Ride sites with convenient access to public transit.

  Park & Ride areas should include secure parking for cars, motorcycles, and bicycles, and have minimal impact on neighborhoods.
- **C-I-2** Work with Kings Area Rural Transit to situate transit stops and hubs at locations that are convenient for transit users, and promote increased transit ridership through the provision of benches, bike racks on buses, and other amenities
- **C-I-3** Work with Kings Area Rural Transit to provide accessible, well lighted and attractive bus shelters that are compatible with surrounding neighborhoods.
- **C-I-7** Ensure that new development is designed to make public transit a viable choice for residents. Options include:
  - Locate medium-high density development whenever feasible near streets served by public transit; and
  - Link neighborhoods to bus stops by continuous sidewalks or pedestrian paths.

### *C-G-3 GUIDING POLICY*

- **C-G-4** Promote bicycling and walking as alternatives to the automobile.

### *C-G-5 IMPLEMENTING ACTIONS*

- **C-I-1** Implement the Lemoore Bikeway Plan in coordination with the County's Regional Bicycle Plan, which is updated every four years.
- **C-I-2** Establish bicycle lanes, bike routes, and bike paths consistent with the General Plan.

- **C-I-3** Increase bicycle safety by:
  - Sweeping and repairing bicycle lanes and paths on a regular basis;
  - Ensuring that bikeways are delineated and signed in accordance with Caltrans' standards, and lighting is provided, where needed;
  - Providing bicycle paths or lanes on bridges and overpasses;
  - Ensuring that all new and improved streets have bicycle-safe drainage grates and are kept free of hazards such as uneven pavement, gravel, and other debris;
  - Providing adequate signage and markings warning vehicular traffic of the existence of merging or crossing bicycle traffic where bike routes and paths make transitions into or across roadways;
  - Working with the Lemoore Union School districts to promote classes on bicycle safety in the schools; and
  - Installing large sidewalks along arterial and median parkway streets so that children may ride safely away from traffic (e.g., Lemoore Avenue and Hanford-Armona Road)
- **C-I-8** Amend the Zoning Ordinance to include standards in all new development for pedestrian circulation including: patterned concrete sidewalks across vehicular streets, crossing signalization, bulb-outs, bicycle parking and lockers integrated with parking areas, and street lighting.

## 2.4.4 - Existing Sources of Toxic Emissions

No existing sources were identified that exceed ARB recommendations in its Air Quality Land Use Handbook for siting sensitive land uses impact the project.

## 2.4.5 - ARB Air Quality Land Use Handbook

Table 6 lists the following ARB advisory recommendations that address the issue of siting "sensitive land uses" near specific sources of air pollution (ARB 2005):

- High traffic freeways and roads
- Distribution centers
- Rail yards
- Ports
- Refineries
- Chrome plating facilities
- Dry cleaners
- Large gas dispensing facilities

The analysis examines the area around the site to determine if potential sources of TAC emissions may impact the project, based on the ARB recommended screening distances.

**Table 6: Recommendations on Siting New Sensitive Land Uses**

| Source Category | Advisory Recommendations |
|---|---|
| Freeways and High-Traffic Roads | Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day. |
| Distribution Centers | Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week). |

## Table 6 (cont.): Recommendations on Siting New Sensitive Land Uses

| Source Category | Advisory Recommendations |
|---|---|
| | Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points. |
| Rail Yards | Avoid siting new sensitive land uses within 1,000 feet of a major service and maintenance rail yard. Within one mile of a rail yard, consider possible siting limitations and mitigation approaches. |
| Ports | Avoid siting of new sensitive land uses immediately downwind of ports in the most heavily impacted zones. Consult local air districts or the ARB on the status of pending analyses of health risks. |
| Refineries | Avoid siting new sensitive land uses immediately downwind of petroleum refineries. Consult with local air districts and other local agencies to determine an appropriate separation. |
| Chrome Platers | Avoid siting new sensitive land uses within 1,000 feet of a chrome plater. |
| Dry Cleaners Using Perchloroethylene | Avoid siting new sensitive land uses within 300 feet of any dry-cleaning operation. For operations with two or more machines, provide 500 feet. For operations with three or more machines, consult with the local air district.<br><br>Do not site new sensitive land uses in the same building with perchloroethylene dry cleaning operations. |
| Gasoline Dispensing Facilities | Avoid siting new sensitive land uses within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gas dispensing facilities. |

Note:
These recommendations are advisory. Land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.

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# SECTION 3: CLIMATE CHANGE SETTING

## 3.1—Climate Change

Climate change is a change in the average weather of the earth that is measured by alterations in wind patterns, storms, precipitation, and temperature. These changes are assessed using historical records of temperature changes occurring in the past, such as during previous ice ages. Many of the concerns regarding climate change use this data to extrapolate a level of statistical significance, specifically focusing on temperature records from the last 150 years (the Industrial Age) that differ from previous climate changes in rate and magnitude.

The United Nations Intergovernmental Panel on Climate Change (IPCC) constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. In its Fourth Assessment Report, the IPCC predicted that the global mean temperature change from 1990 to 2100, given six scenarios, could range from 1.1 degrees Celsius (°C) to 6.4°C. Regardless of analytical methodology, global average temperatures and sea levels are expected to rise under all scenarios (IPCC 2007a). The report also concluded that “[w]arming of the climate system is unequivocal,” and that “[m]ost of the observed increase in global average temperatures since the mid-20$^{th}$ century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations.”

An individual project cannot generate enough GHG emissions to cause a discernible change in global climate. However, the project participates in the potential for global climate change by its incremental contribution of GHGs—and when combined with the cumulative increase of all other sources of GHGs—constitute potential influences on global climate change.

### 3.1.1 - Consequences of Climate Change in California

In California, climate change may result in consequences such as the following (from CCCC 2006 and Moser et al. 2009):

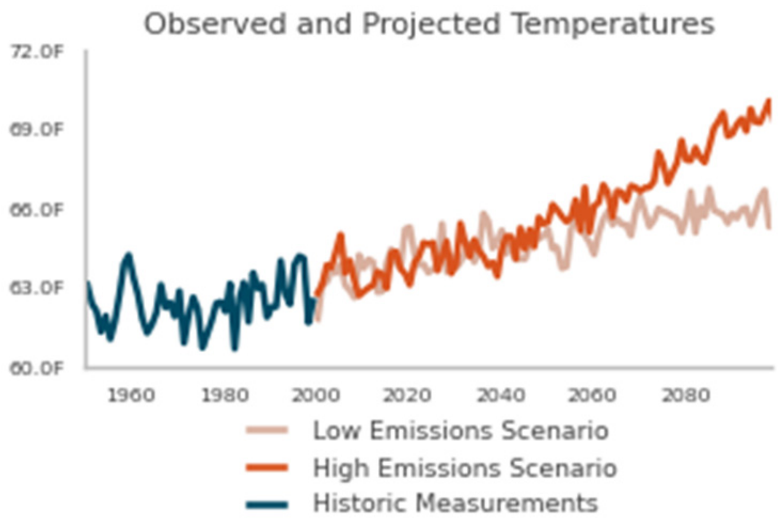
- **A reduction in the quality and supply of water from the Sierra snowpack.** If heat-trapping emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent. This can lead to challenges in securing adequate water supplies. It can also lead to a potential reduction in hydropower.
- **Increased risk of large wildfires.** If rain increases as temperatures rise, wildfires in the grasslands and chaparral ecosystems of southern California are estimated to increase by approximately 30 percent toward the end of the 21$^{st}$ century because more winter rain will stimulate the growth of more plant “fuel” available to burn in the fall. In contrast, a hotter, drier climate could promote up to 90 percent more northern California fires by the end of the century by drying out and increasing the flammability of forest vegetation.
- **Reductions in the quality and quantity of certain agricultural products.** The crops and products likely to be adversely affected include wine grapes, fruit, nuts, and milk.

- **Exacerbation of air quality problems.** If temperatures rise to the medium warming range, there could be 75 to 85 percent more days with weather conducive to ozone formation in Los Angeles and the San Joaquin Valley, relative to today's conditions. This is more than twice the increase expected if rising temperatures remain in the lower warming range. This increase in air quality problems could result in an increase in asthma and other health-related problems.
- **A rise in sea levels resulting in the displacement of coastal businesses and residences.** During the past century, sea levels along California's coast have risen about seven inches. If emissions continue unabated and temperatures rise into the higher anticipated warming range, sea level is expected to rise an additional 22 to 35 inches by the end of the century. Elevations of this magnitude would inundate coastal areas with salt water, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.
- **An increase in temperature and extreme weather events.** Climate change is expected to lead to increases in the frequency, intensity, and duration of extreme heat events and heat waves in California. More heat waves can exacerbate chronic disease or heat-related illness.
- **A decrease in the health and productivity of California's forests.** Climate change can cause an increase in wildfires, an enhanced insect population, and establishment of non-native species.

## Consequences of Climate Change in the Lemoore Area

Figure 5 displays a chart of measured historical and projected annual average temperatures in the project area. As shown in the figure, temperatures are expected to rise in the low and high GHG emissions scenarios. The results indicate that temperatures are predicted to increase by 3.6 degrees Fahrenheit (°F) under the low emission scenario and 6.2°F under the high emissions scenario (CalAdapt 2019).

**Figure 5: Observed and Projected Temperatures for Climate Change in the Project Area**




Source: CalAdapt 2019

### *Water Supply*

The City of Lemoore Water Department would provide water for the project. The City relies on solely on groundwater for potable water supplies. The availability of water for groundwater recharge and

the rate of recharge could decline if climate change were to result in reduced snowpack in the Sierra Nevada.

### *Wildfires*

The project site is within an agricultural area on the edge of the Lemoore urban area with limited fuels that would be subject to a wildfire. Foothill and mountain areas located many miles to the west and east of the Lemoore area subject to wildfire. The potential for increased temperatures and drought conditions due to climate change would result in increased risk from wildfire in those areas.

### Human Health Effects of GHG Emissions

GHG emissions from development projects would not result in concentrations that would directly impact public health. However, the cumulative effects of GHG emissions on climate change have the potential to cause adverse effects to human health.

In its report, Global Climate Change Impacts in the U.S. (2009), the U.S. Global Change Research Program has analyzed the degree to which impacts on human health are expected to impact the United States.

Potential effects of climate change on public health include:

- Direct Temperature Effects: Climate change may directly affect human health through increases in average temperatures, which are predicted to increase the incidence of heat waves and hot extremes.
- Extreme Events: Climate change may affect the frequency and severity of extreme weather events, such as hurricanes and extreme heat and floods, which can be destructive to human health and well-being.
- Climate-Sensitive Diseases: Climate change may increase the risk of some infectious diseases, particularly those diseases that appear in warm areas and are spread by mosquitoes and other insects, such as malaria, dengue fever, yellow fever, and encephalitis.
- Air Quality: Respiratory disorders may be exacerbated by warming-induced increases in the frequency of smog (ground-level ozone) events and particulate air pollution (EPA 2009a).

Although there could be health effects resulting from changes in the climate and the consequences that can occur, inhalation of GHGs at levels currently in the atmosphere would not result in adverse health effects, with the exception of ozone and aerosols (particulate matter). The potential health effects of ozone and particulate matter are discussed in criteria pollutant analyses. At very high indoor concentrations (not at levels existing outside), carbon dioxide, methane, sulfur hexafluoride, and some chlorofluorocarbons can cause suffocation as the gases can displace oxygen (CDC 2010 and OSHA 2003).

## 3.2—Greenhouse Gases

Gases that trap heat in the atmosphere are referred to as GHGs. The effect is analogous to the way a greenhouse retains heat. Common GHGs include water vapor, carbon dioxide, methane, $NO_X$,

chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, ozone, and aerosols. Natural processes and human activities emit GHGs. The presence of GHGs in the atmosphere affects the earth's temperature. It is believed that emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations.

Climate change is driven by forcings and feedbacks. Radiative forcing is the difference between the incoming energy and outgoing energy in the climate system. Positive forcing tends to warm the surface while negative forcing tends to cool it. Radiative forcing values are typically expressed in watts per square meter. A feedback is a climate process that can strengthen or weaken a forcing. For example, when ice or snow melts, it reveals darker land underneath which absorbs more radiation and causes more warming. The global warming potential is the potential of a gas or aerosol to trap heat in the atmosphere. The global warming potential of a gas is essentially a measurement of the radiative forcing of a GHG compared with the reference gas, $CO_2$.

Individual GHG compounds have varying global warming potential and atmospheric lifetimes. $CO_2$, the reference gas for global warming potential, has a global warming potential of one. The global warming potential of a GHG is a measure of how much a given mass of a GHG is estimated to contribute to global warming. To describe how much global warming a given type and amount of GHG may cause, the carbon dioxide equivalent is used. The calculation of the carbon dioxide equivalent is a consistent methodology for comparing GHG emissions since it normalizes various GHG emissions to a consistent reference gas, $CO_2$. For example, $CH_4$'s warming potential of 25 indicates that $CH_4$ has 25 times greater warming effect than $CO_2$ on a molecule-per-molecule basis. A carbon dioxide equivalent is the mass emissions of an individual GHG multiplied by its global warming potential. GHGs defined by Assembly Bill (AB) 32 (see the Climate Change Regulatory Environment section for a description) include $CO_2$, $CH_4$, $NO_X$, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. They are described in Table 7. A seventh GHG, nitrogen trifluoride, was added to Health and Safety Code section 38505(g)(7) as a GHG of concern. The global warming potential amounts are from IPCC Fourth Assessment Report (AR4). The AR4 GWP amounts are incorporated into the CalEEMod 2016.3.2 used in this analysis. Although the newer IPCC Fifth Assessment Report (AR5) includes new global warming potential amounts, ARB continues to use AR4 rates for inventory purposes, including the 2018 inventory released on October 19, 2020, to ensure consistency with past inventories. Until such time as ARB updates its Scoping Plan inventories to utilize AR5 GWPs, it is appropriate to continue using AR4 GWPs for CEQA analyses, which are based on Scoping Plan consistency.

## Table 7: Description of Greenhouse Gases

| Greenhouse Gas | Description and Physical Properties | Sources |
|---|---|---|
| Nitrous oxide | Nitrous oxide (laughing gas) is a colorless GHG. It has a lifetime of 114 years. Its global warming potential is 298. | Microbial processes in soil and water, fuel combustion, and industrial processes. |
| Methane | Methane is a flammable gas and is the main component of natural gas. It has a lifetime of 12 years. Its global warming potential is 25. | Methane is extracted from geological deposits (natural gas fields). Other sources are landfills, fermentation of manure, and decay of organic matter. |

## Table 7 (cont.): Description of Greenhouse Gases

| Greenhouse Gas | Description and Physical Properties | Sources |
|---|---|---|
| Carbon dioxide | Carbon dioxide ($CO_2$) is an odorless, colorless, natural GHG. Carbon dioxide's global warming potential is 1. The concentration in 2005 was 379 parts per million (ppm), which is an increase of about 1.4 ppm per year since 1960. | Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood. |
| Chlorofluorocarbons | These are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. They are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). Global warming potentials range from 124 to 14,800. | Chlorofluorocarbons were synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone. The Montreal Protocol on Substances that Deplete the Ozone Layer prohibited their production in 1987. |
| Perfluorocarbons | Perfluorocarbons have stable molecular structures and only break down by ultraviolet rays about 60 kilometers above Earth's surface. Because of this, they have long lifetimes, between 10,000 and 50,000 years. Global warming potentials range from 7,390 to 12,200. | Two main sources of perfluorocarbons are primary aluminum production and semiconductor manufacturing. |
| Sulfur hexafluoride | Sulfur hexafluoride ($SF_6$) is an inorganic, odorless, colorless, and nontoxic, nonflammable gas. It has a lifetime of 3,200 years. It has a high global warming potential of 22,800. | This gas is man-made and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas. |
| Nitrogen trifluoride | Nitrogen trifluoride ($NF_3$) was added to Health and Safety Code section 38505(g)(7) as a GHG of concern. It has a high global warming potential of 17,200. | This gas is used in electronics manufacture for semiconductors and liquid crystal displays. |
| Sources: Compiled from a variety of sources, primarily Intergovernmental Panel on Climate Change 2007a and 2007b. | | |

The State has begun addressing pollutants referred to as short-lived climate pollutants. Senate Bill (SB) 605, approved by the governor on September 14, 2014 required the ARB to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants by January 1, 2016. ARB was required to complete an emission inventory of these pollutants, identify research needs, identify existing and potential new control measures that offer co-benefits, and coordinated with other state agencies and districts to develop measures. The Short-Lived Climate Pollutant Strategy was approved by the ARB on March 24, 2017. The strategy calls for reductions of 50 percent from black carbon, 40 percent from methane, and 40 percent from HFCs from the 2030 Business as Usual (BAU) inventory for these pollutants (ARB 2017b).

The short-lived climate pollutants include three main components: black carbon, fluorinated gases, and methane. Fluorinated gases and methane are described in Table 7 and are already included in the California GHG inventory. Black carbon has not been included in past GHG inventories; however, ARB will include it in its comprehensive strategy (ARB 2015c).

Ozone is another short-lived climate pollutant that will be part of the strategy. Ozone affects evaporation rates, cloud formation, and precipitation levels. Ozone is not directly emitted, so its precursor emissions, volatile organic compounds (VOC) and oxides of nitrogen ($NO_X$) on a regional scale and $CH_4$ on a hemispheric scale will be subject of the strategy (ARB 2015c).

Black carbon is a component of fine particulate matter. Black carbon is formed by incomplete combustion of fossil fuels, biofuels, and biomass. Sources of black carbon within a jurisdiction may include exhaust from diesel trucks, vehicles, and equipment, as well as smoke from biogenic combustion. Biogenic combustion sources of black carbon include the burning of biofuels used for transportation, the burning of biomass for electricity generation and heating, prescribed burning of agricultural residue, and natural and unnatural wildfires. Black carbon is not a gas but an aerosol—particles or liquid droplets suspended in air. Black carbon only remains in the atmosphere for days to weeks, whereas other GHGs can remain in the atmosphere for years. Black carbon can be deposited on snow, where it absorbs sunlight, reduces sunlight reflectivity, and hastens snowmelt. Direct effects include absorbing incoming and outgoing radiation; indirectly, black carbon can also affect cloud reflectivity, precipitation, and surface dimming (cooling).

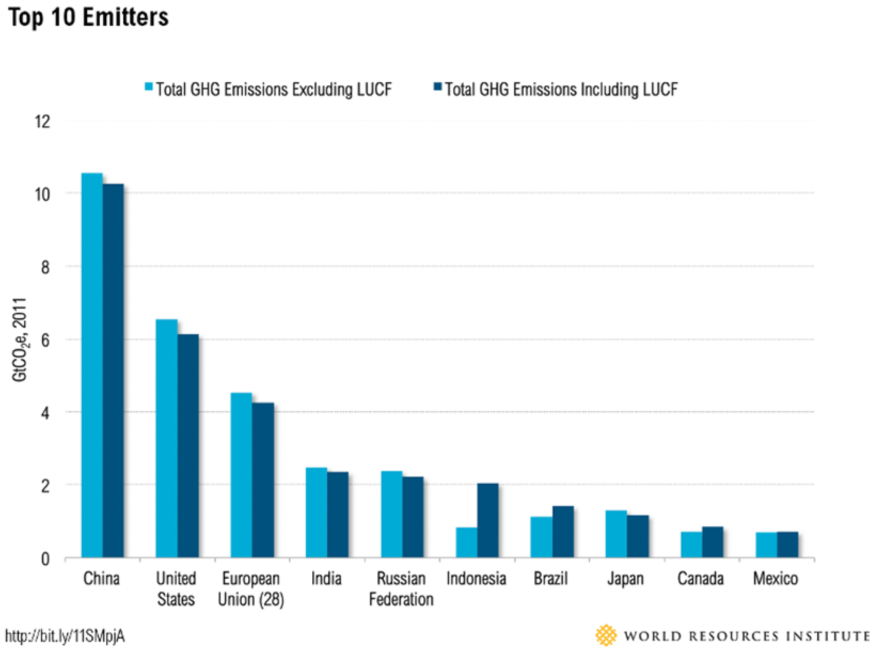
Global warming potentials for black carbon were not defined by the IPCC in its Fourth Assessment Report. The ARB has identified a global warming potential of 3,200 using a 20-year time horizon and 900 using a 100-year time horizon from the IPCC Fifth Assessment. Sources of black carbon are already regulated by ARB, and air district criteria pollutant and toxic regulations that control fine particulate emissions from diesel engines and other combustion sources (ARB 2015d). Additional controls on the sources of black carbon specifically for their GHG impacts beyond those required for toxic and fine particulates are not likely to be needed.

Water vapor is also considered a GHG. Water vapor is an important component of our climate system and is not regulated. Increasing water vapor leads to warmer temperatures, which causes more water vapor to be absorbed into the air. Warming and water absorption increase in a spiraling cycle. Water vapor feedback can also amplify the warming effect of other GHGs, such that the warming brought about by increased carbon dioxide allows more water vapor to enter the atmosphere (NASA 2015b).

### 3.2.1 - Emissions Inventories

An emissions inventory is a database that lists, by source, the amount of air pollutants discharged into the atmosphere of a geographic area during a given time period. Emissions worldwide were approximately 43,286 million metric tons of carbon dioxide equivalents ($MMTCO_2e$) in 2012. As shown in Figure 6, China was the largest GHG emitter with over 10 billion metric tons of $CO_2e$, and the United States was the second-largest GHG emitter with over 6 billion metric tons of $CO_2e$ (WRI 2014).

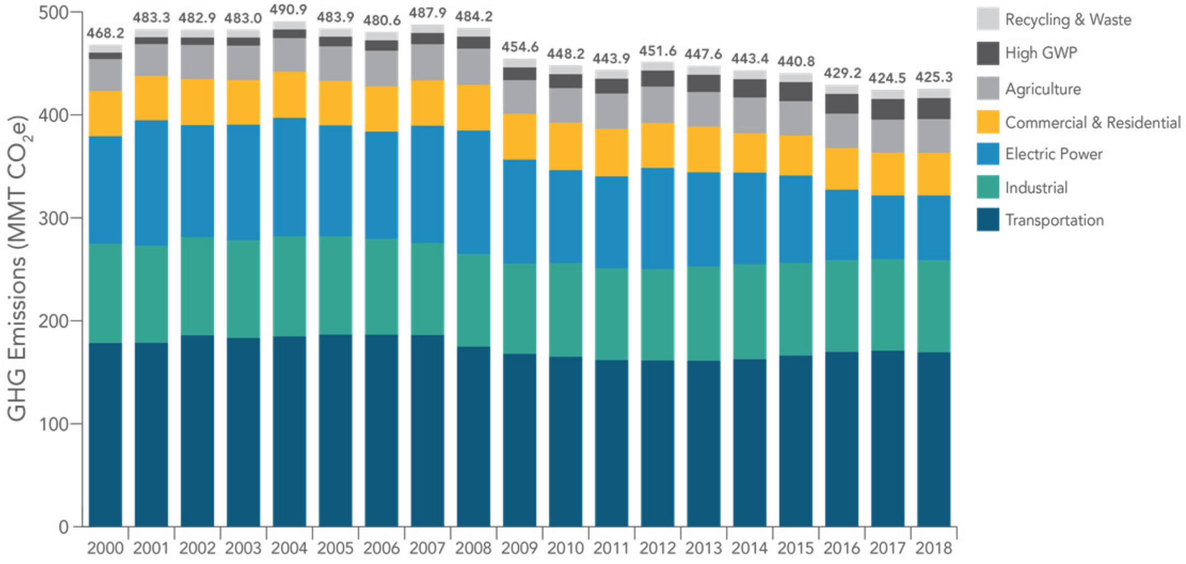
## Figure 6: Greenhouse Gas Emissions by Geographic Area




Source: WRI 2014.

Figure 7 shows the contributors of GHG emissions in California between years 2000 and 2018 by Scoping Plan category. The main contributor was transportation. The second highest sector was industrial, which includes sources from refineries, general fuel use, oil and gas extraction, cement plants, and cogeneration heat output. ARB reported that California's GHG emissions inventory was 425.3 $MMTCO_2e$ in 2018 (ARB 2020c).

## Figure 7: Greenhouse Gas Emission Trends by Scoping Plan Category in California




Source: ARB 2020c.

# 3.3—Regulatory Environment

## 3.3.1 - International

International organizations, such as the ones discussed below, have made substantial efforts to reduce GHGs. Preventing human-induced climate change will require the participation of all nations in solutions to address the issue.

**Intergovernmental Panel on Climate Change.** In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change. The panel was tasked with assessing the scientific, technical, and socioeconomic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation.

**United Nations Framework Convention on Climate Change (Convention).** On March 21, 1994, the United States joined a number of countries around the world in signing the Convention. Under the Convention, governments gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.

**Kyoto Protocol.** The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change. The major feature of the Kyoto Protocol is that it sets binding targets for 37 industrialized countries and the European community for reducing GHG emissions at average of five percent against 1990 levels over the five-year period from 2008–2012. The Convention (as discussed above) encouraged industrialized countries to stabilize emissions; however, the Protocol commits them to do so. Developed countries have contributed more emissions over the last 150 years; therefore, the Protocol places a heavier burden on developed nations under the principle of “common but differentiated responsibilities.”

In 2001, President George W. Bush indicated that he would not submit the treaty to the U.S. Senate for ratification, which effectively ended American involvement in the Kyoto Protocol. In December 2009, international leaders met in Copenhagen to address the future of international climate change commitments post-Kyoto. No binding agreement was reached in Copenhagen; however, the Committee identified the long-term goal of limiting the maximum global average temperature increase to no more than 2°C above pre-industrial levels, subject to a review in 2015. The UN Climate Change Committee held additional meetings in Durban, South Africa in November 2011; Doha, Qatar in November 2012; and Warsaw, Poland in November 2013. The meetings are gradually gaining consensus among participants on individual climate change issues.

On September 23, 2014, more than 100 heads of state and government, along with leaders from the private sector and civil society met at the Climate Summit in New York hosted by the United Nations. At the Summit, heads of government, business, and civil society announced actions in areas that would have the greatest impact on reducing emissions, including: climate finance, energy, transport, industry, agriculture, cities, forests, and building resilience.

**Paris Agreement.** Parties to the United Nations Framework Convention on Climate Change (UNFCCC) reached a landmark agreement on December 12, 2015 in Paris, charting a fundamentally new course in the two-decade-old global climate effort. Culminating in a 4-year negotiating round, the new treaty ends the strict differentiation between developed and developing countries that characterized earlier efforts, replacing it with a common framework that commits all countries to put forward their best efforts and to strengthen those efforts in the years ahead. This includes, for the first time, requirements that all parties report regularly on their emissions and implementation efforts, and undergo international review.

The agreement and a companion decision by parties were the key outcomes of the conference, known as the 21st session of the UNFCCC Conference of the Parties, or COP 21. Together, the Paris Agreement and the accompanying COP decision:

- Reaffirm the goal of limiting global temperature increase well below 2 degrees Celsius, while urging efforts to limit the increase to 1.5 degrees;
- Establish binding commitments by all parties to make “nationally determined contributions” (NDCs), and to pursue domestic measures aimed at achieving them;
- Commit all countries to report regularly on their emissions and “progress made in implementing and achieving” their NDCs, and to undergo international review;
- Commit all countries to submit new NDCs every five years, with the clear expectation that they will “represent a progression” beyond previous ones;
- Reaffirm the binding obligations of developed countries under the UNFCCC to support the efforts of developing countries, while for the first time encouraging voluntary contributions by developing countries too;
- Extend the current goal of mobilizing $100 billion a year in support by 2020 through 2025, with a new, higher goal to be set for the period after 2025;
- Extend a mechanism to address “loss and damage” resulting from climate change, which explicitly will not “involve or provide a basis for any liability or compensation;”
- Require parties engaging in international emissions trading to avoid “double counting;” and
- Call for a new mechanism, similar to the Clean Development Mechanism under the Kyoto Protocol, enabling emission reductions in one country to be counted toward another country’s NDC (C2ES 2015a).

On June 1, 2017, President Trump announced the decision for the United States to withdraw from the Paris Climate Accord (White House 2017). The earliest possible effective withdrawal date by the United States cannot be before November 4, 2020. California remains committed to combating climate change through programs designed to reduce GHGs. Based on the results of the 2020 election, it appears that President-Elect Biden will rejoin the Paris Climate Accord once in office.

## 3.3.2 - Federal Regulations

Prior to the last decade, there were no concrete federal regulations of GHGs or major planning for climate change adaptation. Since then, federal activity has increased. The following are actions regarding the federal government, GHGs, and fuel efficiency.

**Greenhouse Gas Endangerment.** *Massachusetts v. EPA* (Supreme Court Case 05-1120) was argued before the United States Supreme Court on November 29, 2006, in which it was petitioned that the EPA regulate four GHGs, including carbon dioxide, under Section 202(a)(1) of the Clean Air Act. A decision was made on April 2, 2007, in which the Supreme Court found that GHGs are air pollutants covered by the Clean Air Act. The Court held that the Administrator must determine whether emissions of GHGs from new motor vehicles cause or contribute to air pollution, which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under section 202(a) of the Clean Air Act:

- Endangerment Finding: The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases—carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride—in the atmosphere threaten the public health and welfare of current and future generations.
- Cause or Contribute Finding: The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution, which threatens public health and welfare.

These findings do not impose requirements on industry or other entities. However, this was a prerequisite for implementing GHG emissions standards for vehicles, as discussed in the section "Clean Vehicles" below. After a lengthy legal challenge, the United States Supreme Court declined to review an Appeals Court ruling upholding the EPA Administrator findings (EPA 2009c).

**Clean Vehicles.** Congress first passed the Corporate Average Fuel Economy law in 1975 to increase the fuel economy of cars and light duty trucks. The law has become more stringent over time. On May 19, 2009, President Obama put in motion a new national policy to increase fuel economy for all new cars and trucks sold in the United States. On April 1, 2010, the EPA and the Department of Transportation's National Highway Safety Administration announced a joint final rule establishing a national program that would reduce GHG emissions and improve fuel economy for new cars and trucks sold in the United States.

The first phase of the national program applies to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of $CO_2$ per mile, equivalent to 35.5 miles per gallon; that is, if the automobile industry were to meet this $CO_2$ level solely through fuel economy improvements. Together, these standards would cut $CO_2$ emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012–2016). The EPA and the National Highway Safety Administration issued final rules on a second-phase joint rulemaking, establishing national standards for light-duty vehicles for model years 2017 through 2025 in August 2012 (EPA 2012b). The new standards for model years

2017 through 2025 apply to passenger cars, light-duty trucks, and medium duty passenger vehicles. The final standards are projected to result in an average industry fleetwide level of 163 grams/mile of $CO_2$ in model year 2025, which is equivalent to 54.5 miles per gallon if achieved exclusively through fuel economy improvements.

The EPA and the U.S. Department of Transportation issued final rules for the first national standards to reduce GHG emissions and improve fuel efficiency of heavy-duty trucks and buses on September 15, 2011, which became effective November 14, 2011. For combination tractors, the agencies are proposing engine and vehicle standards that began in the 2014 model year and achieve up to a 20-percent reduction in $CO_2$ emissions and fuel consumption by the 2018 model year. For heavy-duty pickup trucks and vans, the agencies are proposing separate gasoline and diesel truck standards, which phase in starting in the 2014 model year and achieve up to a 10-percent reduction for gasoline vehicles, and a 15-percent reduction for diesel vehicles by 2018 model year (12 and 17 percent respectively if accounting for air conditioning leakage). Lastly, for vocational vehicles, the engine and vehicle standards would achieve up to a 10-percent reduction in fuel consumption and $CO_2$ emissions from the 2014 to 2018 model years.

**Mandatory Reporting of Greenhouse Gases.** The Consolidated Appropriations Act of 2008, passed in December 2007, requires the establishment of mandatory GHG reporting requirements. On September 22, 2009, the EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule, which became effective January 1, 2010. The rule requires reporting of GHG emissions from large sources and suppliers in the United States, and is intended to collect accurate and timely emissions data to inform future policy decisions. Under the rule, suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions are required to submit annual reports to the EPA.

**New Source Review.** The EPA issued a final rule on May 13, 2010 that establishes thresholds for GHGs, which will define when permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. This final rule "tailors" the requirements of these Clean Air Act permitting programs to limit which facilities will be required to obtain Prevention of Significant Deterioration and Title V permits. In the preamble to the revisions to the federal code of regulations, the EPA states:

> This rulemaking is necessary because without it the Prevention of Significant Deterioration and Title V requirements would apply, as of January 2, 2011, at the 100 or 250 tons per year levels provided under the Clean Air Act, greatly increasing the number of required permits, imposing undue costs on small sources, overwhelming the resources of permitting authorities, and severely impairing the functioning of the programs. EPA is relieving these resource burdens by phasing in the applicability of these programs to greenhouse gas sources, starting with the largest greenhouse gas emitters. This rule establishes two initial steps of the phase-in. The rule also commits the agency to take certain actions on future steps addressing smaller sources, but excludes certain smaller sources from Prevention of Significant Deterioration and Title V permitting for greenhouse gas emissions until at least April 30, 2016.

The EPA estimates that facilities responsible for nearly 70 percent of the national GHG emissions from stationary sources will be subject to permitting requirements under this rule. This includes the nation's largest GHG emitters—power plants, refineries, and cement production facilities.

**Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units.** As required by a settlement agreement, the EPA proposed new performance standards for emissions of carbon dioxide for new, affected, fossil fuel-fired electric utility generating units on March 27, 2012. New sources greater than 25 megawatts would be required to meet an output based standard of 1,000 pounds of carbon dioxide per megawatt-hour, based on the performance of widely used natural gas combined cycle technology. President Trump signed the Executive Order on Energy Independence (E.O. 13783), which calls for a review of the Clean Power Plan. On October 16, 2017, the EPA issued the proposed rule Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units an Energy Independence (EPA 2017).

**Cap-and-Trade.** Cap-and-Trade refers to a policy tool where emissions are limited to a certain amount and can be traded, or provides flexibility on how the emitter can comply. There is no federal GHG Cap-and-Trade program currently; however, some states have joined to create initiatives to provide a mechanism for Cap-and-Trade.

The Regional Greenhouse Gas Initiative is an effort to reduce GHGs among the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. Each state caps carbon dioxide emissions from power plants, auctions carbon dioxide emission allowances, and invests the proceeds in strategic energy programs that further reduce emissions, save consumers money, create jobs, and build a clean energy economy. The Initiative began in 2008.

The Western Climate Initiative partner jurisdictions have developed a comprehensive initiative to reduce regional GHG emissions to 15 percent below 2005 levels by 2020. The partners are California, British Columbia, Manitoba, Ontario, and Quebec. Currently only California and Quebec are participating in the Cap-and-Trade program (C2ES 2015).

## 3.3.3 - California

### Legislative Actions to Reduce GHGs

The State of California legislature has enacted a series of bills that constitute the most aggressive program to reduce GHGs of any state in the nation. Some legislation such as the landmark AB 32 California Global Warming Solutions Act of 2006 was specifically enacted to address GHG emissions. Other legislation such as Title 24 and Title 20 energy standards were originally adopted for other purposes such as energy and water conservation, but also provide GHG reductions. This section describes the major provisions of the legislation.

**AB 32.** The California State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. "Greenhouse gases" as defined under AB 32 include carbon dioxide, methane, $NO_X$, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Since AB 32 was enacted, a seventh

chemical, nitrogen trifluoride, has also been added to the list of GHGs. The ARB is the state agency charged with monitoring and regulating sources of GHGs. AB 32 states the following:

> Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

The ARB approved the 1990 GHG emissions level of 427 $MMTCO_2e$ on December 6, 2007 (ARB 2007). Therefore, to meet the State's target, emissions generated in California in 2020 are required to be equal to or less than 427 $MMTCO_2e$. Emissions in 2020 in a BAU scenario were estimated to be 596 $MMTCO_2e$, which do not account for reductions from AB 32 regulations (ARB 2008a). At that rate, a 28 percent reduction was required to achieve the 427 $MMTCO_2e$ 1990 inventory. In October 2010, ARB prepared an updated 2020 forecast to account for the effects of the 2008 recession and slower forecasted growth. The 2020 inventory without the benefits of adopted regulation is now estimated at 545 $MMTCO_2e$. Therefore, under the updated forecast, a 21.7 percent reduction from BAU is required to achieve 1990 levels (ARB 2010a).

### *Progress in Achieving AB 32 Targets and Remaining Reductions Required*

The State has made steady progress in implementing AB 32 and achieving targets included in Executive Order S-3-05. The progress is evident in updated emission inventories prepared by ARB, which showed that the State inventory dropped below 1990 levels for the first time in 2016 (ARB 2018b). The GHG State inventories for 2017 and 2018 are also remain below the 2020 target. The 2017 Scoping Plan Update includes projections indicating that the State will meet or exceed the 2020 target with adopted regulations (ARB 2017c).

**ARB 2008 Scoping Plan**. The ARB's Climate Change Scoping Plan (Scoping Plan) contains measures designed to reduce the State's emissions to 1990 levels by the year 2020 to comply with AB 32 (ARB 2008). The Scoping Plan identifies recommended measures for multiple GHG emission sectors and the associated emission reductions needed to achieve the year 2020 emissions target—each sector has a different emission reduction target. Most of the measures target the transportation and electricity sectors. As stated in the Scoping Plan, the key elements of the strategy for achieving the 2020 GHG target include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewables energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related GHG emissions for regions throughout California and pursuing policies and incentives to achieve those targets;

- Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State's long-term commitment to AB 32 implementation.

The 2008 Scoping Plan strategy is fully implemented and will continue to be in place along with other new measures contained in the 2017 Scoping Plan to achieve later targets.

The 2008 Scoping Plan differentiates between "capped" and "uncapped" strategies. Capped strategies are subject to the proposed Cap-and-Trade program. The Scoping Plan states that the inclusion of these emissions within the Cap-and-Trade program will help ensure that the year 2020 emission targets are met despite some degree of uncertainty in the emission reduction estimates for any individual measure. Implementation of the capped strategies is calculated to achieve a sufficient amount of reductions by 2020 to achieve the emission target contained in AB 32. Uncapped strategies that will not be subject to the Cap-and-Trade emissions caps and requirements are provided as a margin of safety by accounting for additional GHG emission reductions (ARB 2008).

**Cap-and-Trade Program.** The Cap-and-Trade Program is a key element of the Scoping Plan. It sets a statewide limit on sources responsible for 85 percent of California's GHG emissions, and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The program is designed to provide covered entities the flexibility to seek out and implement the lowest cost options to reduce emissions. The program conducted its first auction in November 2012. Compliance obligations began for power plants and large industrial sources in January 2013. Other significant milestones include linkage to Quebec's Cap-and-Trade system in January 2014 and starting the compliance obligation for distributors of transportation fuels, natural gas, and other fuels in January 2015 (ARB 2015d). The latest auction (Joint Auction 25) was conducted in November 2020 (ARB 2020d).

The Cap-and-Trade Program provides a firm cap, ensuring that the 2020 statewide emission limit will not be exceeded. An inherent feature of the Cap-and-Trade program is that it does not guarantee GHG emissions reductions in any discrete location or by any particular source. Rather, GHG emissions reductions are guaranteed only on an accumulative basis. As summarized by ARB in the First Update:

> The Cap-and-Trade Regulation gives companies the flexibility to trade allowances with others or take steps to cost-effectively reduce emissions at their own facilities. Companies that emit more have to turn in more allowances or other compliance instruments. Companies that can cut their GHG emissions have to turn in fewer allowances. But as the cap declines, aggregate emissions must be reduced. In other words, a covered entity theoretically could increase its GHG emissions every year and still comply with the Cap-and-Trade Program if there is a reduction in GHG emissions from other covered entities. Such a focus on aggregate GHG emissions is considered appropriate because climate change is a global phenomenon, and the effects of GHG emissions are considered cumulative (ARB 2014b).

The Cap-and-Trade Program works with other direct regulatory measures and provides an economic incentive to reduce emissions. If California's direct regulatory measures reduce GHG emissions more than expected, then the Cap-and-Trade Program will be responsible for relatively fewer emissions reductions. If California's direct regulatory measures reduce GHG emissions less than expected, then the Cap-and-Trade Program will be responsible for relatively more emissions reductions. Thus, the Cap-and-Trade Program assures that California will meet its 2020 GHG emissions reduction mandate:

> The Cap-and-Trade Program establishes an overall limit on GHG emissions from most of the California economy—the "capped sectors." Within the capped sectors, some of the reductions are being accomplished through direct regulations, such as improved building and appliance efficiency standards, the [Low Carbon Fuel Standard] LCFS, and the 33 percent [Renewables Portfolio Standard] RPS. Whatever additional reductions are needed to bring emissions within the cap is accomplished through price incentives posed by emissions allowance prices. Together, direct regulation and price incentives assure that emissions are brought down cost-effectively to the level of the overall cap. The Cap-and-Trade Regulation provides assurance that California's 2020 limit will be met because the regulation sets a firm limit on 85 percent of California's GHG emissions. In sum, the Cap-and-Trade Program will achieve aggregate, rather than site specific or project-level, GHG emissions reductions. Also, due to the regulatory architecture adopted by ARB in AB 32, the reductions attributed to the Cap-and-Trade Program can change over time depending on the State's emissions forecasts and the effectiveness of direct regulatory measures (ARB 2014b).

**AB 398.** The Governor signed AB 398 on July 25, 2017 to extend the Cap-and-Trade Program to 2030. The legislation includes provisions to ensure that offsets used by sources are limited to 4 percent of their compliance obligation from 2021 through 2025 and 6 percent from 2026 through 2030. AB 398 also prevents Air Districts from adopting or implementing emission reduction rules from stationary sources that are also subject to the Cap-and-Trade Program (CAR 2017).

**SB 32.** The Governor signed SB 32 on September 8, 2016. SB 32 gave ARB the statutory responsibility to include the 2030 target previously contained in Executive Order B-30-15 in the 2017 Scoping Plan Update. SB 32 states that "In adopting rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emissions reductions authorized by this division, the state [air resources] board shall ensure that statewide greenhouse gas emissions are reduced to at least 40 percent below the statewide greenhouse gas emissions limit no later than December 31, 2030." The 2017 Climate Change Scoping Plan Update addressing the SB 32 targets was adopted on December 14, 2017. The major elements of the framework proposed to achieve the 2030 target are as follows:

1. SB 350
   - Achieve 50 percent Renewables Portfolio Standard (RPS) by 2030.
   - Doubling of energy efficiency savings by 2030.
2. Low Carbon Fuel Standard (LCFS)
   - Increased stringency (reducing carbon intensity 18 percent by 2030, up from 10 percent in 2020).

3. Mobile Source Strategy (Cleaner Technology and Fuels Scenario)
    - Maintaining existing GHG standards for light- and heavy-duty vehicles.
    - Put 4.2 million zero-emission vehicles (ZEVs) on the roads.
    - Increase ZEV buses, delivery and other trucks.
4. Sustainable Freight Action Plan
    - Improve freight system efficiency.
    - Maximize use of near-zero emission vehicles and equipment powered by renewable energy.
    - Deploy over 100,000 zero-emission trucks and equipment by 2030.
5. Short-Lived Climate Pollutant (SLCP) Reduction Strategy
    - Reduce emissions of methane and hydrofluorocarbons 40 percent below 2013 levels by 2030.
    - Reduce emissions of black carbon 50 percent below 2013 levels by 2030.
6. SB 375 Sustainable Communities Strategies
    - Increased stringency of 2035 targets.
7. Post-2020 Cap-and-Trade Program
    - Declining caps, continued linkage with Québec, and linkage to Ontario, Canada.
    - ARB will look for opportunities to strengthen the program to support more air quality co-benefits, including specific program design elements. In Fall 2016, ARB staff described potential future amendments including reducing the offset usage limit, redesigning the allocation strategy to reduce free allocation to support increased technology and energy investment at covered entities and reducing allocation if the covered entity increases criteria or toxics emissions over some baseline.
8. 20 percent reduction in greenhouse gas emissions from the refinery sector.
9. By 2018, develop Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink (ARB 2017c).

**SB 375—The Sustainable Communities and Climate Protection Act of 2008.** SB 375 was signed into law on September 30, 2008. According to SB 375, the transportation sector is the largest contributor of GHG emissions, which emits over 40 percent of the total GHG emissions in California. SB 375 states, "Without improved land use and transportation policy, California will not be able to achieve the goals of AB 32." SB 375 does the following: (1) requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for the implementation of the strategies.

Concerning CEQA, SB 375—as codified in Public Resources Code Section 21159.28—states that CEQA findings determinations for certain projects are not required to reference, describe, or discuss (1) growth-inducing impacts or (2) any project-specific or cumulative impacts from cars and light-duty truck trips generated by the project on global warming or the regional transportation network if the project:

1. Is in an area with an approved Sustainable Communities Strategy or an alternative planning strategy that the ARB accepts as achieving the greenhouse gas emission reduction targets;
2. Is consistent with that strategy (in designation, density, building intensity, and applicable policies); and
3. Incorporates the mitigation measures required by an applicable prior environmental document.

The ARB has prepared the Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets. The update includes an increase in the 2035 target for Kings County from 10 percent to 13 percent (ARB 2017c). However, the 2018 Kings County RTP/SCS maintains targets of 5 percent by 2020 and 10 percent by 2035. The targets will be revisited in the 2022 RTP/SCS (KCAG 2018).

**AB 1493 Pavley Regulations and Fuel Efficiency Standards.** California AB 1493, enacted on July 22, 2002, required the ARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. Implementation of the regulation was delayed by lawsuits filed by automakers and by the EPA's denial of an implementation waiver. The EPA subsequently granted the requested waiver in 2009, which was upheld by the by the U.S. District Court for the District of Columbia in 2011 (ARB 2013d).

The standards were phased in during the 2009 through 2016 model years. When fully phased in, the near-term (2009–2012) standards resulted in an approximately 22 percent reduction compared with the 2002 fleet, and the mid-term (2013–2016) standards resulted in about a 30 percent reduction. Several technologies stand out as providing significant reductions in emissions at favorable costs. These include discrete variable valve lift or camless valve actuation to optimize valve operation, rather than relying on fixed valve timing and lift as has historically been done; turbocharging to boost power and allow for engine downsizing; improved multi-speed transmissions; and improved air conditioning systems that operate optimally, leak less, and/or use an alternative refrigerant (ARB 2013e).

The second phase of the implementation for the Pavley bill was incorporated into Amendments to the Low-Emission Vehicle Program referred to as LEV III or the Advanced Clean Cars program. The Advanced Clean Car program combines the control of smog-causing pollutants and GHG emissions into a single coordinated package of requirements for model years 2017 through 2025. The regulation will reduce GHGs from new cars by 34 percent from 2016 levels by 2025. The rules will reduce pollutants from gasoline and diesel-powered cars, and deliver increasing numbers of zero-emission technologies, such as full battery electric cars, newly emerging plug-in hybrid electric vehicles, and hydrogen fuel cell cars. The regulations will also ensure adequate fueling infrastructure is available for the increasing numbers of hydrogen fuel cell vehicles planned for deployment in California (ARB 2017d).

**SB 1368—Emission Performance Standards.** In 2006, the State Legislature adopted SB 1368, which was subsequently signed into law by the governor. SB 1368 directs the California Public Utilities Commission to adopt a performance standard for GHG emissions for the future power purchases of California utilities. SB 1368 seeks to limit carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than 5 years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant.

Because of the carbon content of its fuel source, a coal-fired plant cannot meet this standard because such plants emit roughly twice as much carbon as natural gas, combined cycle plants. Accordingly, the new law effectively prevents California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the State. The California Public Utilities Commission adopted the regulations required by SB 1368 on August 29, 2007. The regulations implementing SB 1368 establish a standard for baseload generation owned by, or under long-term contract to publicly owned utilities, of 1,100 lbs. $CO_2$ per megawatt-hour (MWh).

**SB 1078—Renewable Electricity Standards.** On September 12, 2002, Governor Gray Davis signed SB 1078, requiring California to generate 20 percent of its electricity from renewable energy by 2017. SB 107 changed the due date to 2010 instead of 2017. On November 17, 2008, Governor Arnold Schwarzenegger signed Executive Order S-14-08, which established a Renewable Portfolio Standard target for California requiring that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. Governor Schwarzenegger also directed the ARB (Executive Order S-21-09) to adopt a regulation by July 31, 2010, requiring the State's load serving entities to meet a 33 percent renewable energy target by 2020 The ARB approved the Renewable Electricity Standard on September 23, 2010 by Resolution 10-23. In 2011, the state legislature adopted this higher standard in SB X1-2. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas.

**SB 350—Clean Energy and Pollution Reduction Act of 2015.** The legislature approved and the governor then signed SB 350 on October 7, 2015, which reaffirms California's commitment to reducing its GHG emissions and addressing climate change. Key provisions include an increase in the RPS, higher energy efficiency requirements for buildings, initial strategies towards a regional electricity grid, and improved infrastructure for electric vehicle charging stations. Provisions for a 50 percent reduction in the use of petroleum statewide were removed from the Bill because of opposition and concern that it would prevent the Bill's passage. Specifically, SB 350 requires the following to reduce statewide GHG emissions:

- Increase the amount of electricity procured from renewable energy sources from 33 percent to 50 percent by 2030, with interim targets of 40 percent by 2024, and 25 percent by 2027.
- Double the energy efficiency in existing buildings by 2030. This target will be achieved through the California Public Utility Commission (CPUC), the California Energy Commission (CEC), and local publicly owned utilities.
- Reorganize the Independent System Operator (ISO) to develop more regional electricity transmission markets and improve accessibility in these markets, which will facilitate the growth of renewable energy markets in the western United States (California Leginfo 2015).

**SB 100—California Renewables Portfolio Standard Program.** The Governor approved SB 100 on September 10, 2018. The legislation revised the Renewable Portfolio Standard goals to achieve the 50 percent renewable resources target by December 31, 2026, and to achieve a 60 percent target by December 31, 2030. The bill would require that retail sellers and local publicly owned electric utilities procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt hours of those products sold to their retail end-use customers

achieve 44 percent of retail sales by December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030 (California Leginfo 2018).

**SBX 7-7—The Water Conservation Act of 2009.** The legislation directs urban retail water suppliers to set individual 2020 per capita water use targets and begin implementing conservation measures to achieve those goals. Meeting this statewide goal of 20 percent decrease in demand will result in a reduction of almost 2 million acre-feet in urban water use in 2020.

### Executive Orders Related to GHG Emissions

California's Executive Branch has taken several actions to reduce GHGs through the use of executive orders. Although not regulatory, they set the tone for the State and guide the actions of state agencies.

**Executive Order S-3-05.** On June 1, 2005, former California Governor Arnold Schwarzenegger announced through Executive Order S-3-05, the following reduction targets for GHG emissions:

- By 2010, reduce greenhouse gas emissions to 2000 levels.
- By 2020, reduce greenhouse gas emissions to 1990 levels.
- By 2050, reduce greenhouse gas emissions to 80 percent below 1990 levels.

The 2050 reduction goal represents what some scientists believe is necessary to reach levels that will stabilize the climate. The 2020 goal was established to be a mid-term target. Because this is an executive order, the goals are not legally enforceable for local governments or the private sector.

**Executive Order B-30-15.** On April 29, 2015, Governor Edmund G. Brown Jr. issued an executive order to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor's executive order aligns California's GHG reduction targets with those of leading international governments ahead of the United Nations Climate Change Conference in Paris late 2015. The executive order sets a new interim statewide GHG emission reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030 in order to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050, and directs the ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of $MMTCO_2e$. The executive order also requires the State's climate adaptation plan to be updated every three years and for the State to continue its climate change research program, among other provisions. As with Executive Order S-3-05, this executive order is not legally enforceable against local governments and the private sector. Legislation that would update AB 32 to provide post-2020 targets was signed by the Governor in 2016. SB 32 includes a 2030 mandate matching the requirements of the Executive Order.

**Executive Order S-01-07—Low Carbon Fuel Standard.** The governor signed Executive Order S 01-07 on January 18, 2007. The order mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. In particular, the executive order established a Low Carbon Fuel Standard (LCFS) and directed the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission, the ARB, the University of California, and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity" of transportation fuels. This analysis supporting development of the protocols was included in the State Implementation Plan for alternative fuels (State Alternative Fuels

Plan adopted by California Energy Commission on December 24, 2007) and was submitted to ARB for consideration as an "early action" item under AB 32. The ARB adopted the Low Carbon Fuel Standard on April 23, 2009.

The Low Carbon Fuel Standard was subject to legal challenge in 2011. Ultimately, ARB was required to bring a new LCFS regulation to the Board for consideration in February 2015. The proposed LCFS regulation was required to contain revisions to the 2010 LCFS as well as new provisions designed to foster investments in the production of the low-carbon fuels, offer additional flexibility to regulated parties, update critical technical information, simplify and streamline program operations, and enhance enforcement. The Office of Administrative Law (OAL) approved the regulation on November 16, 2015 (ARB 2015e). The regulation was last amended in 2018.

**Executive Order S-13-08.** Executive Order S-13-08 states that "climate change in California during the next century is expected to shift precipitation patterns, accelerate sea level rise and increase temperatures, thereby posing a serious threat to California's economy, to the health and welfare of its population and to its natural resources." Pursuant to the requirements in the order, the 2009 California Climate Adaptation Strategy (California Natural Resources Agency 2009) was adopted, which is the ". . . first statewide, multi-sector, region-specific, and information-based climate change adaptation strategy in the United States." Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

**Executive Order B-55-18.** Executive Order B-55-18 issued by Governor Brown on September 10, 2018 establishes a new statewide goal to achieve carbon neutrality as soon as possible, but no later than 2045, and achieve and maintain net negative emissions thereafter. The executive order directs ARB to work with relevant state agencies to develop a framework for implementation and accounting that tracks progress toward this goal (Brown 2018).

### California Regulations and Building Codes

California has a long history of adopting regulations to improve energy efficiency in new and remodeled buildings. These regulations have kept California's energy consumption relatively flat even with rapid population growth.

**Title 20 Appliance Efficiency Regulations.** California Code of Regulations, Title 20: Division 2, Chapter 4, Article 4, Sections 1601–1608: Appliance Efficiency Regulations regulates the sale of appliances in California. The Appliance Efficiency Regulations include standards for both federally regulated appliances and non-federally regulated appliances. Twenty-three categories of appliances are included in the scope of these regulations including lighting, air conditioning, and most home appliances. The standards within these regulations apply to appliances that are sold or offered for sale in California, except those sold wholesale in California for final retail sale outside the State and those designed and sold exclusively for use in recreational vehicles or other mobile equipment (CEC 2018a).

**Title 24 Energy Efficiency Standards.** California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings, was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are

updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The most current 2016 Building Energy Efficiency Standards went into effect on January 1, 2017 (CEC 2016). The 2019 Building Energy Efficiency Standards are scheduled to go into effect on January 1, 2020 (CEC 2018b).

**Title 24 California Green Building Standards Code** (California Code of Regulations Title 24, Part 11 code) is a comprehensive and uniform regulatory code for all residential, commercial, and school buildings that went in effect January 1, 2011. The code is updated on a regular basis, with the most recent update consisting of the 2016 California Green Building Code Standards that became effective January 1, 2017. Local jurisdictions are permitted to adopt more stringent requirements, as state law provides methods for local enhancements. The Code recognizes that many jurisdictions have developed existing construction and demolition ordinances, and defers to them as the ruling guidance, provided they provide a minimum 50-percent diversion requirement. The code also provides exemptions for areas not served by construction and demolition recycling infrastructure. State building code provides the minimum standard that buildings need to meet in order to be certified for occupancy, which is generally enforced by the local building official (CBSC 2019).

The California Green Building Standards Code (California Code of Regulations Title 24, Part 11 code) requires:

- **Short-term bicycle parking.** If a commercial project is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for five percent of visitor motorized vehicle parking capacity, with a minimum of one two-bike capacity rack (5.106.4.1.1).
- **Long-term bicycle parking.** For buildings with over 10 tenant-occupants, provide secure bicycle parking for five percent of tenant-occupied motorized vehicle parking capacity, with a minimum of one space (5.106.4.1.2).
- **Designated parking.** Provide designated parking in commercial projects for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table 5.106.5.2 (5.106.5.2).
- **Recycling by Occupants.** Provide readily accessible areas that serve the entire building and are identified for the depositing, storage, and collection of nonhazardous materials for recycling. (5.410.1).
- **Construction waste.** A minimum 50-percent diversion of construction and demolition waste from landfills, increasing voluntarily to 65 and 80 percent for new homes and 80-percent for commercial projects. (5.408.1, A5.408.3.1 [nonresidential], A5.408.3.1 [residential]). All (100 percent) of trees, stumps, rocks and associated vegetation and soils resulting from land clearing shall be reused or recycled (5.408.3).
- **Wastewater reduction.** Each building shall reduce the generation of wastewater by one of the following methods:
    1. The installation of water-conserving fixtures or
    2. Using nonpotable water systems (5.303.4).

- **Water use savings.** Twenty percent mandatory reduction in indoor water use with voluntary goal standards for 30, 35, and 40 percent reductions (5.303.2, A5303.2.3 [nonresidential]).
- **Water meters.** Separate water meters for buildings in excess of 50,000 square feet or buildings projected to consume more than 1,000 gallons per day (5.303.1).
- **Irrigation efficiency.** Moisture-sensing irrigation systems for larger landscaped areas (5.304.3).
- **Materials pollution control.** Low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring, and particleboard (5.404).
- **Building commissioning.** Mandatory inspections of energy systems (i.e., heat furnace, air conditioner, mechanical equipment) for nonresidential buildings over 10,000 square feet to ensure that all are working at their maximum capacity according to their design efficiencies (5.410.2).

**Model Water Efficient Landscape Ordinance.** The Model Water Efficient Landscape Ordinance (Ordinance) was required by AB 1881 Water Conservation Act. The bill required local agencies to adopt a local landscape ordinance at least as effective in conserving water as the Model Ordinance by January 1, 2010. Reductions in water use of 20 percent consistent with (SBX-7-7) 2020 mandate are expected for the ordinance. Governor Brown's Drought Executive Order of April 1, 2015 (EO B-29-15) directed DWR to update the ordinance through expedited regulation. The California Water Commission approved the revised ordinance on July 15, 2015, which became effective on December 15, 2015. New development projects that include landscaped areas of 500 square feet or more are subject to the ordinance. The update requires:

- More efficient irrigation systems
- Incentives for graywater usage
- Improvements in on-site stormwater capture
- Limiting the portion of landscapes that can be planted with high water use plants
- Reporting requirements for local agencies.

**SB 97 and the CEQA Guidelines Update.** Passed in August 2007, SB 97 added Section 21083.05 to the Public Resources Code. The code states: "(a) On or before July 1, 2009, the Office of Planning and Research shall prepare, develop, and transmit to the Resources Agency guidelines for the mitigation of GHG emissions or the effects of GHG emissions as required by this division, including, but not limited to, effects associated with transportation or energy consumption. (b) On or before January 1, 2010, the Resources Agency shall certify and adopt guidelines prepared and developed by the Office of Planning and Research pursuant to subdivision (a)."

Section 21097 was also added to the Public Resources Code. This provided an exemption until January 1, 2010 for transportation projects funded by the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006, or projects funded by the Disaster Preparedness and Flood Prevention Bond Act of 2006—in stating that the failure to analyze adequately the effects of GHGs would not violate CEQA. The Natural Resources Agency completed the approval process and the Amendments became effective on March 18, 2010. The Natural Resources Agency adopted additional amendments related to greenhouse gases in the 2019 CEQA Guidelines Update adopted on December 28, 2018.

The 2010 CEQA Amendments along with the 2018 CEQA Amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in CEQA documents. The CEQA Amendments fit within the existing CEQA framework by amending existing CEQA Guidelines to reference climate change.

Section 15064.4(b) of the CEQA Guidelines provides direction for lead agencies for assessing the significance of impacts of GHG emissions:

- The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; or
- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project. In determining the significance of impacts, the lead agency may consider a project's consistency with the State's long-term climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is not cumulatively considerable.

Section 15064.4(c) states that a lead agency may use a model or methodology to estimate greenhouse gas emissions resulting from a project. The lead agency has discretion to select the model or methodology it considers most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change. The lead agency must support its selection of a model or methodology with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use.

The 2018 CEQA Guidelines include the following discussion regarding thresholds of significance:

> (d) Using environmental standards as thresholds of significance promotes consistency in significance determinations and integrates environmental review with other environmental program planning and regulation. Any public agency may adopt or use an environmental standard as a threshold of significance. In adopting or using an environmental standard as a threshold of significance, a public agency shall explain how the particular requirements of that environmental standard reduce project impacts, including cumulative impacts, to a level that is less than significant, and why the environmental standard is relevant to the analysis of the project under consideration. For the purposes of this subdivision, an "environmental standard" is a rule of general application that is adopted by a public agency through a public review process and that is all of the following:

(1) a quantitative, qualitative or performance requirement found in an ordinance, resolution, rule, regulation, order, plan or other environmental requirement;
(2) adopted for the purpose of environmental protection;
(3) addresses the environmental effect caused by the project; and,
(4) applies to the project under review.

In addition, the 2018 amendments revised Appendix G Checklist questions to include a new question specifically on energy conservation.

CEQA emphasizes that the effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impacts analysis (see CEQA Guidelines Section 15130(f)).

### California Supreme Court GHG Ruling

A November 30, 2015 ruling, the *California Supreme Court in Center for Biological Diversity (CBD) v. California Department of Fish and Wildlife (CDFW)* on the Newhall Ranch project, concluded that whether the project was consistent with meeting statewide emission reduction goals is a legally permissible criterion of significance, but the significance finding for the project was not supported by a reasoned explanation based on substantial evidence. The Court offered potential solutions on pages 25 to 27 of the ruling to address this issue summarized below.

Specifically, the Court advised that:

- **Substantiation of Project Reductions from BAU.** A lead agency may use a BAU comparison based on the Scoping Plan's methodology if it also substantiates the reduction a particular project must achieve to comply with statewide goals. The Court suggested a lead agency could examine the "data behind the Scoping Plan's business-as-usual model" to determine the necessary project-level reductions from new land use development at the proposed location (p. 25).
- **Compliance with Regulatory Programs or Performance Based Standards.** "A lead agency might assess consistency with A.B. 32's goal in whole or part by looking to compliance with regulatory programs designed to reduce greenhouse gas emissions from particular activities. (See Final Statement of Reasons, supra, at p. 64 [greenhouse gas emissions 'may be best analyzed and mitigated at a programmatic level.'].) To the extent a project's design features comply with or exceed the regulations outlined in the Scoping Plan and adopted by the Air Resources Board or other state agencies, a lead agency could appropriately rely on their use as showing compliance with 'performance based standards' adopted to fulfill 'a statewide . . . plan for the reduction or mitigation of greenhouse gas emissions.' (CEQA Guidelines § 15064.4(a)(2), (b)(3); see also id., § 15064(h)(3) [determination that impact is not cumulatively considerable may rest on compliance with previously adopted plans or regulations, including 'plans or regulations for the reduction of greenhouse gas emissions'].)" (p. 26).
- **Compliance with GHG Reduction Plans or Climate Action Plans (CAPs).** A lead agency may utilize "geographically specific GHG emission reduction plans" such as climate action plans or greenhouse gas emission reduction plans to provide a basis for the tiering or streamlining of project-level CEQA analysis (p. 26).

- **Compliance with Local Air District Thresholds.** A lead agency may rely on "existing numerical thresholds of significance for greenhouse gas emissions" adopted by, for example, local air districts (p. 27).

Therefore, consistent with CEQA Guidelines Appendix G, the three factors identified in CEQA Guidelines Section 15064.4 and the recently issued Newhall Ranch opinion, the GHG impacts would be considered significant if the project would:

- Conflict with a compliant GHG Reduction Plan if adopted by the lead agency;
- Exceed the SJVAPCD GHG Reduction Threshold; or
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emission of GHGs.

## 3.3.4 - San Joaquin Valley Air Pollution Control District

### Climate Change Action Plan

On August 21, 2008, the SJVAPCD Governing Board approved a proposal called the Climate Change Action Plan (CCAP). The CCAP began with a public process bringing together stakeholders, land use agencies, environmental groups, and business groups to conduct public workshops to develop comprehensive policies for CEQA guidelines, a carbon exchange bank, and voluntary GHG emissions mitigation agreements for the Board's consideration. The CCAP contains the following goals and actions:

- Develop GHG significance thresholds to address CEQA projects with GHG emission increases.
- Develop the San Joaquin Valley Carbon Exchange for banking and trading GHG reductions.
- Authorize use of the SJVAPCD's existing inventory reporting system to allow use for GHG reporting required by AB 32 regulations.
- Develop and administer GHG reduction agreements to mitigate proposed emission increases from new projects.
- Support climate protection measures that reduce greenhouse gas emissions as well as toxic and criteria pollutants. Oppose measures that result in a significant increase in toxic or criteria pollutant emissions in already impacted areas.

On December 17, 2009, the SJVAPCD Governing Board adopted "Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA," and the policy "District Policy—Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency." The SJVAPCD concluded that the existing science is inadequate to support quantification of the impacts that project-specific GHG emissions have on global climatic change. The SJVAPCD found the effects of project-specific emissions to be cumulative, and without mitigation, their incremental contribution to global climatic change could be considered cumulatively considerable. The SJVAPCD found that this cumulative impact is best addressed by requiring all projects to reduce their GHG emissions, whether through project design elements or mitigation.

The SJVAPCD's approach is intended to streamline the process of determining if project-specific GHG emissions would have a significant effect. Projects exempt from the requirements of CEQA, and projects complying with an approved plan or mitigation program would be determined to have a less than significant cumulative impact. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources, and must have a certified final CEQA document.

For non-exempt projects, those projects for which there is no applicable approved plan or program, or those projects not complying with an approved plan or program, the lead agency must evaluate the project against performance-based standards and would require the adoption of design elements, known as a Best Performance Standard, to reduce GHG emissions. The Best Performance Standards (BPS) have not yet fully been established, though they must be designed to achieve a 29 percent reduction when compared with the BAU projections identified in ARB's AB 32 Scoping Plan.

BAU represents the emissions that would occur in 2020 if the average baseline emissions during the 2002–2004 period were grown to 2020 levels, without control. Thus, these standards would carry with them pre-quantified emissions reductions, eliminating the need for project-specific quantification. Therefore, projects incorporating BPS would not require specific quantification of GHG emissions, and automatically would be determined to have a less than significant cumulative impact for GHG emissions.

For stationary source permitting projects, BPS means, "The most stringent of the identified alternatives for control of GHG emissions, including type of equipment, design of equipment and operational and maintenance practices, which are achieved-in-practice for the identified service, operation, or emissions unit class." The SJVAPCD has identified BPS for the following sources: boilers; dryers and dehydrators; oil and gas extraction; storage, transportation, and refining operations; cogeneration; gasoline dispensing facilities; volatile organic compound control technology; and steam generators.

For development projects, BPS means, "Any combination of identified GHG emission reduction measures, including project design elements and land use decisions that reduce project-specific GHG emission reductions by at least 29 percent compared with business as usual."

Projects not incorporating BPS would require quantification of GHG emissions and demonstration that BAU GHG emissions have been reduced or mitigated by 29 percent. As stated earlier, ARB's adjusted inventory reduced the amount required by the State to achieve 1990 emission levels from 29 percent to 21.7 percent to account for slower growth experienced since the 2008 recession. According to SJVAPCD guidance, quantification of GHG emissions would be required for all projects for which the lead agency has determined that an environmental impact report is required, regardless of whether the project incorporates BPS. The SJVAPCD has not yet adopted BPS for development projects, so quantification of project emissions is required. No update to address SB 32 2030 targets has been accomplished.

### San Joaquin Valley Carbon Exchange

The SJVAPCD initiated work on the San Joaquin Valley Carbon Exchange in November 2008. The purpose of the carbon exchange is to quantify, verify, and track voluntary GHG emissions reductions

generated within the San Joaquin Valley. However, the SJVAPCD has pursued an alternative strategy that incorporates the GHG emissions into its existing Rule 2301—Emission Reduction Credit Offset Banking that formerly only addressed criteria pollutants. The SJVAPCD is also participating with the California Air Pollution Control Officers Association (CAPCOA), of which it is a member, in the CAPCOA Greenhouse Gas Reduction Exchange (GHG Rx). The GHG Rx is operated cooperatively by air districts that have elected to participate. Participating districts have signed a Memorandum of Understanding (MOU) with CAPCOA and agree to post only those credits that meet the Rx standards for quality. The objective is to provide a secure, low-cost, high-quality greenhouse gas exchange for credits created in California. The GHG Rx is intended to help fulfill compliance obligations or mitigation needs of local projects subject to environmental review, reducing the uncertainty of using credits generated in distant locations. The SJVAPCD currently has no credits posted to the GHG Rx website as of this writing (CAPCOA 2021).

#### *Rule 2301*

While the Climate Change Action Plan indicated that the GHG emission reduction program would be called the San Joaquin Valley Carbon Exchange, the District incorporated a method to register voluntary GHG emission reductions into its existing Rule 2301—Emission Reduction Credit Banking through amendments of the rule. Amendments to the rule were adopted on January 19, 2012. The purposes of the amendments to the rule include the following:

- Provide an administrative mechanism for sources to bank voluntary GHG emission reductions for later use.
- Provide an administrative mechanism for sources to transfer banked GHG emission reductions to others for any use.
- Define eligibility standards, quantitative procedures, and administrative practices to ensure that banked GHG emission reductions are real, permanent, quantifiable, surplus, and enforceable.

### Kings County Association of Governments

#### *Regional Transportation Plan*

KCAG adopted the 2018 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS) on August 22, 2018. The RTP/SCS is a planning document prepared in cooperation with the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), the California Department of Transportation (Caltrans), and other stakeholders, including transportation system users. The SCS portion of the plan is intended to show how integrated land use and transportation planning can lead to lower greenhouse gas (GHG) emissions from autos and light trucks. SB 375 includes the following four primary findings related to the RTP/SCS development process:

- SB 375 required the ARB to develop regional GHG emission reduction targets for cars and light trucks for each of the 18 MPOs in California, including KCAG. ARB approved targets for the San Joaquin Valley in January 2013. The target for Kings County is a per capita reduction in GHG emissions from passenger vehicle travel of five percent by 2020 and 10 percent by 2035 relative to 2005 levels. The 2018 RTP indicates that the County continues to pursue the 5 percent reduction by 2020 and 10 percent reduction by 2035 (KCAG 2018).

- SB 375 required the preparation of an SCS. KCAG included a SCS that specifies how the GHG emission reduction target set by ARB will be achieved in the RTP. If the target cannot be met through the SCS, then an Alternative Planning Strategy (APS) shall be prepared by KCAG. Chapter 12 of the 2018 RTP/SCS includes the SCS for Kings County.
- SB 375 streamlines CEQA requirements for specific residential and mixed-use developments that are consistent with the KCAG SCS or APS (as determined by ARB) to achieve regional GHG emissions reduction target.

The ARB adopted new targets on March 22, 2018 that will take effect for the 2022 RTP/SCS cycle. For KCAG, the new targets will be 5% for 2020 and 13% for 2035 (ARB 2017C).

## 3.3.5 - Local

### City of Lemoore 2030 General Plan

The City of Lemoore 2030 General Plan adopted in May 2008 (City of Lemoore 2008). includes greenhouse gas policies in the Conservation and Open Space chapter.

### City of Lemoore 2030 General Plan GHG Related Policies

The General Plan Conservation and Open Space chapter includes several policies related to GHG emissions. The policies direct the City to prepare a GHG emission inventory and a GHG emission reduction plan. The City has not yet prepared the inventory and plan.

- **COS-I-38** Compile and update an inventory of greenhouse gas emissions from City operations and track related solid waste, energy, economic, and environmental data.
- **COS-I-39** Support State efforts to reduce greenhouse gases and emissions through local action that will reduce motor vehicle use, support alternative forms of transportation, require energy conservation in new construction, and energy management in public buildings.
- **COS-I-40** Prepare a Greenhouse Gas Emissions Reduction Plan, focusing on feasible actions the City can take to minimize the adverse impacts of Plan implementation on climate change and air quality. The Plan will include but will not be limited to:
  - An inventory of all known, or reasonably discoverable, sources of greenhouse gases (GHGs) that currently exist in the City and sources that existed in 1990. In determining what is a source of GHG emissions, the City may rely on the definition of “greenhouse gas emissions source” or “source” as defined in Section 38505 of the California Global Warming Solutions Act (“AB 32”) or its governing regulations. The inventory may include estimates of emissions drawing on available information from to state and regional air quality boards, supplemented by information obtained by the City.
  - A projected inventory of the new GHGs that can reasonably be expected to be emitted in the year 2030 due to the City’s discretionary land use decisions pursuant to the 2030 General Plan Update, as well as new GHGs emitted by the City’s internal government operations. The projected inventories will include estimates, supported by substantial evidence, of future emissions from planned land use and information from state and regional air quality boards and agencies.
  - A target for the reduction of those sources of future emissions reasonably attributable to the City’s discretionary land use decisions under the 2030 General Plan and the City’s

internal government operations, and feasible GHG emission reduction measures whose purpose shall be to meet this reduction target by regulating those sources of GHG emissions reasonably attributable to the City's discretionary land use decisions and the City's internal government operations.

- **CD-I-58** Require new development to incorporate passive heating and natural lighting strategies to the extent feasible and practical. These strategies should include, but are not limited to, the following:
  - Using building orientation, mass and form, including façade, roof, and choice of building materials, color, type of glazing, and insulation to minimize heat loss during winter months and heat gain during the summer months;
  - Designing building openings to regulate internal climate and maximize natural lighting, while keeping glare to a minimum; and
  - Reducing heat-island effect of large concrete roofs and parking surfaces.
- **CD-I-60** Incorporate green building standards into the Zoning Ordinance and building code to ensure a high level of energy efficiency in new development, retrofitting projects, and City facilities. These standards should include, but are not limited to, the following:
  - Require the use of Energy Star® appliances and equipment in new and substantial renovations of residential development, commercial development, and City facilities;
  - Require all new City facilities and new residential development incorporate green building methods to qualify for the equivalent of LEED Certified "Silver" rating or better (passive solar orientation must be a minimum component);
  - Require all new residential development to be pre-wired for optional photovoltaic roof energy systems and/or solar water heating on south facing roofs; and
  - Require all new projects that will use more than 40,000 kilowatt hours per year of electricity to install photovoltaic energy systems.
- **CD-I-61** Adopt a Green Building Design Ordinance. Green Building Design Guidelines may include required and recommended "green" design and construction strategies including: Building Site and Form, Natural Heating or Cooling, Transportation, Building Envelope and Space Planning, Building Materials, Water Systems, Electrical Systems, HVAC Systems, Construction Management, and Commissioning.
- **CD-I-62** Facilitate environmentally sensitive construction practices by:
  - Restricting use of chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs) and halons in mechanical equipment and building materials;
  - Promoting use of products that are durable and allow efficient end-of-life disposal (recyclable);
  - Requiring subdivision applications on sites greater than five acres to submit a construction waste management plan for City approval;
  - Promoting the purchase of locally or regionally available materials; and
  - Promoting the use of cost-effective design and construction strategies that reduce resource and environmental impacts.

### Waste Diversion

With the passage of SB 1016, the Per Capita Disposal Measurement System, only per capita disposal rates are measured. Targets are based on the per capita disposal rates. The Kings Waste and Recycling Authority's disposal rate for 2019 was 4.1 pounds per person per day, which is well below the target of 4.4 pounds per person per day (CalRecycle 2020).

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# SECTION 4: MODELING PARAMETERS AND ASSUMPTIONS

## 4.1—Model Selection and Guidance

Air pollutant emissions can be estimated by using emission factors and a level of activity. Emission factors represent the emission rate of a pollutant given the activity over time; for example, grams of $NO_X$ per horsepower-hour or grams of $NO_X$ per vehicle mile traveled. The ARB has published emission factors for on-road mobile vehicles/trucks in the EMission FACtors Model (EMFAC) mobile source emissions model and emission factors for off-road equipment and vehicles in the OFFROAD emissions model. An air emissions model (or calculator) combines the emission factors and the various levels of activity and outputs the emissions for the various pieces of equipment.

The California Emissions Estimator Model (CalEEMod) version 2016.3.2 was developed by the South Coast Air Quality Management District in cooperation with other air districts throughout the State. CalEEMod is designed as a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with construction and operation from a variety of land uses.

The modeling follows District guidance where applicable from its GAMAQI. The models used in this analysis are summarized as follows:

- Construction emissions: CalEEMod, version 2016.3.2
- Operational emissions: CalEEMod, version 2016.3.2

## 4.2—Air Pollutants and GHGs Assessed

### 4.2.1 - Criteria Pollutants Assessed

The following air pollutants are assessed in this analysis:

- Reactive organic gases (ROG)
- Nitrogen oxides ($NO_X$)
- Carbon monoxide (CO)
- Sulfur dioxide ($SO_2$)
- Particulate matter less than 10 microns in diameter ($PM_{10}$)
- Particulate matter less than 2.5 microns in diameter ($PM_{2.5}$)

Note that the project would emit ozone precursors ROG and $NO_X$. However, the project would not directly emit ozone, since it is formed in the atmosphere during the photochemical reaction of ozone precursors. Other criteria pollutants such as vinyl chloride, hydrogen sulfide, lead, and sulfates were not included because of their low levels of emissions from the project.

As noted previously, the project would emit ultrafine particles. However, there is currently no standard separate from the $PM_{2.5}$ standards for ultrafine particles and there is no accepted methodology to quantify or assess the significance of such particles.

### 4.2.2 - Greenhouse Gases Assessed

This analysis is restricted to GHGs identified by AB 32, which include: carbon dioxide, methane, $NO_X$, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The project would generate a variety of GHGs, including several defined by AB 32 such as carbon dioxide, methane, and $NO_X$.

The project may emit GHGs that are not defined by AB 32. For example, the project may generate aerosols through emissions of DPM from the vehicles and trucks that would access the project site. Aerosols are short-lived particles, as they remain in the atmosphere for about one week. Black carbon is a component of aerosol. Studies have indicated that black carbon has a high global warming potential; however, the Intergovernmental Panel on Climate Change states that it has a low level of scientific certainty (IPCC 2007a).

Water vapor could be emitted from evaporated water used for landscaping, but this is not a significant impact because water vapor concentrations in the upper atmosphere are primarily due to climate feedbacks rather than emissions from project-related activities.

The project would emit nitrogen oxides and volatile organic compounds, which are ozone precursors. Ozone is a GHG; however, unlike the other GHGs, ozone in the troposphere is relatively short-lived and can be reduced in the troposphere on a daily basis. Stratospheric ozone can be reduced through reactions with other pollutants.

Certain GHGs defined by AB 32 would not be emitted by the project. Perfluorocarbons and sulfur hexafluoride are typically used in industrial applications, none of which would be used by the project. Therefore, it is not anticipated that the project would emit perfluorocarbons or sulfur hexafluoride.

## 4.3—Construction Modeling Assumptions

Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction emissions result from on-site and off-site activities. On-site emissions principally consist of exhaust emissions from the activity levels of heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly $PM_{10}$) from disturbed soil. Additionally, paving operations and application of architectural coatings would release VOC emissions. Off-site emissions are caused by motor vehicle exhaust from delivery vehicles, worker traffic, and road dust ($PM_{10}$ and $PM_{2.5}$).

### 4.3.1 - Project Schedule

The project was assumed to begin construction activities as early as January 2022 with first occupancy in 2022. The project was assumed to be completed in four phases over 16 years. Under this scenario, buildout would occur by 2038. For analysis purposes, the project was assumed to construct 125 single-family dwelling units and 145 multi-family units during the first phase. Phase 2 would construct 125 single-family dwelling units and 59 multi-family units. Phase 3 would construct 125 single-family units. The remaining 172 single-family units would be constructed during Phase 4. The maximum construction activity would occur during Phase 1 when site preparation, grading, and ground-up building construction could occur simultaneously for single-family and multi-family

projects. The highest operational emissions would occur during the first full year after buildout is completed (2038). Actual buildout timing is subject to market conditions.

## 4.3.2 - Construction Equipment Emission Factors

The analysis uses CalEEMod default assumptions for the equipment used during construction except for demolition. CalEEMod default construction equipment and equipment activity are based on surveys of construction projects of various sizes conducted for development in Southern California and may overstate equipment use for larger project sites in regions outside of Southern California and should be considered highly conservative. The modeling assumptions can be reviewed in the modeling results included in Appendix A of this report. CalEEMod contains an inventory of construction equipment that incorporates estimates of the number of equipment, age, horsepower, and equipment emission, and control level or tier from which rates of emissions are developed. The CalEEMod default equipment assumptions were used in this analysis for the estimation of emissions from on-site construction equipment. CalEEMod's off-road emission factors and load factors are from the ARB OFFROAD model.

## 4.3.3 - Demolition

No demolition is required for the project.

## 4.3.4 - Site Preparation

Site preparation involves clearing vegetation (grubbing and tree/stump removal) and removing stones and other unwanted material or debris prior to grading. During site preparation, emissions are generated from the use of diesel construction equipment. Fugitive dust is generated during soil-disturbing activities and truck loading and unloading. Default modeling assumptions were used for site preparation.

## 4.3.5 - Grading

During grading activities, fugitive dust can be generated from the movement of dirt on the project site. CalEEMod estimates dust from dozers moving dirt around, dust from graders or scrapers leveling the land, and loading or unloading dirt into haul trucks. Each activity is calculated differently in CalEEMod, based on the number of acres traversed by the grading equipment.

Only some pieces of equipment generate fugitive dust in CalEEMod. The CalEEMod manual identifies various equipment and the acreage disturbed in an 8-hour day:

- Crawler tractors, graders, and rubber-tired dozers: 0.5 acre per 8-hour day
- Scrapers: 1 acre per 8-hour day

Therefore, the following acres are the total quantities disturbed per day, per phase, according to the acreage disturbed quantities listed above:

- Site preparation = 1.03 acres per day
- Grading = 2.06 acres per day

Default assumptions for equipment and days of grading were used in the modeling.

### 4.3.6 - Building Construction, Paving, and Architectural Coatings

The analysis uses the default modeling assumptions from CalEEMod for construction equipment during building construction, paving, and application of architectural coatings. As previously discussed, the equipment hours for the building construction phases were adjusted to retain the CalEEMod default-generated horsepower hours. The coatings used for the project are required to comply with the SJVAPCD Rule 4601—Architectural Coatings. The rule required flat paints to meet a standard of 50 grams per liter (g/l) and gloss paints 100 g/l by 2012 for an average rate of 65 g/l. Most of the coatings used for residential painting are flat paints.

### 4.3.7 - Construction Off-site Trips

Worker trips are accounted for during the construction phases, based on 1.25 trips per piece of equipment (the CalEEMod default). The CalEEMod default worker trip length of 10.8 miles was retained. The CalEEMod default vehicle fleet (LD Mix) was used for employee trips.

Vendor trips for the building construction phase are calculated from a study performed by the Sacramento Metropolitan Air Quality Management District (SMAQMD) based on land use and size. The CalEEMod defaults for vendor trips, trip length, and vehicle fleet (Heavy Duty Truck Vehicle Fleet Mix) were used.

## 4.4—Operation

Operational emissions are those emissions that occur when the project is occupied by the future residents. The major sources are summarized below.

### 4.4.1 - Motor Vehicles

Motor vehicle emissions refer to exhaust and road dust emissions from the automobiles that would travel to and from the project residences.

Project trip generation rates were obtained from the *Institute of Transportation Engineers Trip Generation Manual, 10$^{th}$ Edition* for single-family dwelling units and low-rise apartments.

A pass-by trip accounts for vehicles already on the roadway network that stop at the project site as they pass-by; the pass-by trips are existing vehicle trips in the community. CalEEMod default rates of three percent pass-by trips were used in this analysis.

The vehicle fleet mix is defined as the mix of motor vehicle classes active during the operation of the project. Emission factors are assigned to the expected vehicle mix as a function of vehicle class, speed, and fuel use (gasoline and diesel-powered vehicles). The CalEEMod default vehicle fleet mix overstates the percentage of heavy-duty trucks for residential development projects; therefore, the SJVAPCD-approved Residential Fleet Mix was used for the analysis.

### 4.4.2 - Architectural Coatings (Painting)

Paints release VOC emissions during application and drying. The buildings in the project would be repainted on occasion. The project is required to comply with the SJVAPCD Rule 4601—Architectural Coatings. The rule required flat paints to meet a standard of 50 grams per liter (g/l) and gloss paints

100 g/l by 2012 for an average rate of 65 g/l. Most of the coatings used for residential painting are flat paints.

### 4.4.3 - Consumer Products

Consumer products are various solvents used in non-industrial applications, which emit VOCs during their product use. "Consumer Product" means a chemically formulated product used by household and institutional consumers, including but not limited to: detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products. It does not include other paint products, furniture coatings, or architectural coatings (ARB 2015f). The default emission factor developed for CalEEMod was used.

### 4.4.4 - Landscape Equipment

CalEEMod estimated the landscaping equipment using the default assumptions in the model.

### 4.4.5 - Electricity

Electricity used by the project (for lighting, etc.) would result in emissions from the power plants that would generate electricity distributed on the electrical power grid. Electricity emissions estimates are only used in the GHG analysis. CalEEMod was used to estimate these emissions from the project.

#### Electricity Emission Factor

The default CalEEMod emission factors for Pacific Gas & Electric (from the CEC's year 2006 data) are as follows:

- Carbon dioxide: 641.35 pounds per megawatt hour (lbs/MWh)
- Methane: 0.029 lb/MWh
- Nitrous oxide: 0.006 lb/MWh

It is assumed that the Renewable Electricity Standards would have taken effect by 2020. The Renewable Electricity Standard requires that electricity providers include a minimum of 33 percent renewable energy in their portfolios by the year 2020. Pacific Gas & Electric provides estimates of its emission factor per megawatt hour of electricity delivered to its customers. The Pacific Gas and Electric Company (PG&E) emissions factor for 2020 for $CO_2$ is provided below. No projections have been made by PG&E for later years, so the rate is assumed to remain constant through the 2038 project buildout year. The rates for methane and nitrous oxide are based on compliance with the Renewable Portfolio Standard.

- Carbon dioxide: 290 lbs/MWh
- Methane: 0.022 lb/MWh
- Nitrous oxide: 0.005 lb/MWh

### 4.4.6 - Electricity Consumption

CalEEMod has three categories for electricity consumption: electricity that is impacted by Title 24 regulations, non-Title 24 electricity, and lighting. The Title 24 uses are defined as the major building envelope systems covered by California's Building Code Title 24 Part 6, such as space heating, space cooling, water heating, and ventilation. Lighting is separate since it can be both part and not part of Title 24. Since lighting is not considered as part of the building envelope energy budget, CalEEMod does not consider lighting to have any further association with Title 24 references in the program. Non-Title 24 includes everything else such as appliances and electronics. Total electricity consumption in CalEEMod is divided into the three categories. The percentage for each category is determined by using percentages derived from the CalEEMod default electricity intensity factors. The percentages are then applied to the electricity consumption to result in the values used in the analysis.

### 4.4.7 - Natural Gas

The project would generate emissions from the combustion of natural gas for water heaters, heat, etc. CalEEMod has two categories for natural gas consumption: Title 24 and non-Title 24. CalEEMod defaults were used.

### 4.4.8 - Water and Wastewater

GHG emissions are emitted from the use of electricity to pump water to the project and to treat wastewater. CalEEMod defaults were used.

### 4.4.9 - Refrigerants

During operation, air conditioners and refrigeration systems may leak refrigerants (hydrofluorocarbons). Hydrofluorocarbons are typically used for refrigerants, which are long-lived GHGs. Residential uses of refrigerants are minor; therefore, they were not estimated.

### 4.4.10 - Solid Waste

GHG emissions would be generated from the decomposition of solid waste generated by the project. CalEEMod was used to estimate the GHG emissions from this source. The CalEEMod default for the mix of landfill types is as follows:

- Landfill no gas capture: 6%
- Landfill capture gas flare: 94%
- Landfill capture gas energy recovery: 0%

### 4.4.11 - Vegetation

There is currently limited carbon sequestration occurring on-site from existing vegetation. The project would plant trees and integrate landscaping into the project design, which would provide carbon sequestration. However, the number of trees to be planted is unknown and data are insufficient to accurately determine the impact that existing plants have on carbon sequestration. For this analysis, it was assumed that the loss and addition of carbon sequestration that are due to the project would be balanced; therefore, emissions due to carbon sequestration were not included.

# SECTION 5: AIR QUALITY IMPACT ANALYSIS

This section calculates the expected emissions from construction and operation of the project as a necessary requisite for assessing the regulatory significance of project emissions on a regional and localized level.

## 5.1—CEQA Guidelines

The CEQA Guidelines define a significant effect on the environment as “a substantial, or potentially substantial, adverse change in the environment.” To determine if a project would have a significant impact on air quality, the type, level, and impact of emissions generated by the project must be evaluated.

The following air quality significance thresholds are contained in Appendix G of the CEQA Guidelines effective December 28, 2018. A significant impact would occur if the project would:

a) Conflict with or obstruct implementation of the applicable air quality plan;

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable national or state ambient air quality standard;

c) Expose sensitive receptors to substantial pollutant concentrations; or

d) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people.

While the final determination of whether a project is significant is within the purview of the lead agency pursuant to Section 15064(b) of the CEQA Guidelines, the District recommends that its quantitative air pollution thresholds be used to determine the significance of project emissions. If the lead agency finds that the project has the potential to exceed these air pollution thresholds, the project should be considered to have significant air quality impacts. The applicable District thresholds and methodologies are contained under each impact statement below.

## 5.2—Impact Analysis

### 5.2.1 - Consistency with Air Quality Plan

**Impact AIR-1: The project would not conflict with or obstruct implementation of the applicable air quality plan.**

#### Impact Analysis

The CEQA Guidelines indicate that a significant impact would occur if the project would conflict with or obstruct implementation of the applicable air quality plan. The GAMAQI indicates that projects that do not exceed SJVAPCD regional criteria pollutant emissions quantitative thresholds would not conflict with or obstruct the applicable air quality plan (AQP). An additional criterion regarding the project’s implementation of control measures was assessed to provide further evidence of the

project's consistency with current AQPs. This document proposes the following criteria for determining project consistency with the current AQPs:

1. Will the project result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQPs? This measure is determined by comparison to the regional and localized thresholds identified by the District for Regional and Local Air Pollutants.
2. Will the project comply with applicable control measures in the AQPs? The primary control measures applicable to development projects is Regulation VIII—Fugitive $PM_{10}$ Prohibitions and Rule 9510 Indirect Source Review.

### *Contribution to Air Quality Violations*

A measure for determining if the project is consistent with the air quality plans is if the project would not result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the air quality plans. Regional air quality impacts and attainment of standards are the result of the cumulative impacts of all emission sources within the air basin. Individual projects are generally not large enough to contribute measurably to an existing violation of air quality standards. Therefore, the cumulative impact of the project is based on its cumulative contribution. Because of the region's nonattainment status for ozone, $PM_{2.5}$, and $PM_{10}$—if project-generated emissions of either of the ozone precursor pollutants (ROG and $NO_X$), $PM_{10}$, or $PM_{2.5}$ would exceed the District's significance thresholds—then the project would be considered to contribute to violations of the applicable standards and conflict with the attainment plans.

As discussed in Impact AIR-2 below, emissions of ROG, $NO_X$, $PM_{10}$, and $PM_{2.5}$ associated with the construction and operation of the project would not exceed the District's significance thresholds. As shown in Impact AIR-2, the project would not result in CO hotspots that would violate CO standards. Therefore, the project would not contribute to air quality violations.

### *Compliance with Applicable Control Measures*

The AQP contains a number of control measures, which are enforceable requirements through the adoption of rules and regulations. A description of rules and regulations that apply to this project is provided below.

**SJVAPCD Rule 9510—Indirect Source Review (ISR)** is a control measure in the 2006 $PM_{10}$ Plan that requires $NO_X$ and $PM_{10}$ emission reductions from development projects in the San Joaquin Valley. The $NO_X$ emission reductions help reduce the secondary formation of $PM_{10}$ in the atmosphere (primarily ammonium nitrate and ammonium sulfate) and also reduce the formation of ozone. Reductions in directly emitted $PM_{10}$ reduce particles such as dust, soot, and aerosols. Rule 9510 is also a control measure in the 2016 Plan for the 2008 8-Hour Ozone Standard. Developers of projects subject to Rule 9510 must reduce emissions occurring during construction and operational phases through on-site measures, or pay off-site mitigation fees. The project is required to comply with Rule 9510.

**Regulation VIII—Fugitive** $PM_{10}$ **Prohibitions** is a control measure that is one main strategies from the 2006 $PM_{10}$ for reducing the $PM_{10}$ emissions that are part of fugitive dust. Residential projects over 10 acres are required to file a Dust Control Plan (DCP) containing dust control practices sufficient to comply with Regulation VIII. The project is required to prepare a DCP to comply with Regulation VIII.

Other control measures that apply to the project are Rule 4641—Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operation that requires reductions in VOC emissions during paving and Rule 4601—Architectural Coatings that limits the VOC content of all types of paints and coatings sold in the San Joaquin Valley. These measures apply at the point of sale of the asphalt and the coatings, so project compliance is ensured without additional mitigation measures.

The project would comply with all applicable SJVAPCD rules and regulations. Therefore, the project meets this criterion.

Although the project requires a General Plan Amendment, the City of Lemoore 2030 General Plan includes policies that will help further reduce project impacts. The applicable measures are listed in Table 8.

### Table 8: Consistency with Lemoore 2030 General Plan

| General Plan Policy | Project Consistency |
|---|---|
| **COS-I-42** Conforming to the SJVAPCD Fugitive Dust Rule, require developers to use best management practices (BMPs) to reduce particulate emission as a condition of approval for subdivision maps, site plans and all grading permits. BMPs include:<br>• During clearing, grading, earth-moving or excavation operations, fugitive dust emissions shall be controlled by regular watering, paving of construction roads, or other dust-preventive measures;<br>• All materials excavated or graded shall be either sufficiently watered or covered by canvas or plastic sheeting to prevent excessive amounts of dust;<br>• All materials transported off-site shall be either sufficiently watered or covered by canvas or plastic sheeting to prevent excessive amounts of dust;<br>• All motorized vehicles shall have their tires watered before exiting a construction site;<br>• The area disturbed by demolition, clearing, grading, earth-moving, or excavation shall be minimized at all times; and<br>• All construction-related equipment shall be maintained in good working order to reduce exhaust. | **Consistent**. All individual projects with the Lacey Area Master Plan are required to submit Dust Control Plans to the SJVAPCD containing BMPs appropriate to the project prior to commencing grading activities. This measure is enforced by the SJVAPCD. |

## Table 8 (cont.): Consistency with Lemoore 2030 General Plan

| General Plan Policy | Project Consistency |
|---|---|
| **COS-I-43** Enact a wood-burning ordinance compliant with District Rule 4901 that:<br>• Regulates the installation of EPA-certified wood heaters or approved woodburning appliances in new developments or replacements;<br>• Lists permitted and prohibited fuels; and Describes a "No Burn" policy on days when the air quality is poor. | **Consistent**. All residential developments will use natural gas fireplaces or have no fireplaces. Under Rule 4901, two woodburning devices can be installed per acre. |
| **COS-I-45** Utilize more plants and trees in public area landscaping, focusing on those that are documented as more efficient pollutant absorbers. | **Consistent**. The project will install trees consistent with the City of Lemoore Landscaping Requirements. |
| **C-I-5** Use traffic calming measures to reduce speeds in existing and future residential areas. Traffic calming measures may include, but are not limited to:<br>• Reducing curb-to-curb pavement widths to the minimum necessary to ensure traffic flow and safety;<br>• Allowing on-street parking where possible;<br>• Providing generous street tree plantings and other vegetation;<br>• Building corner bulb-outs and intersection roundabouts;<br>• Allowing for curvilinear street design; and<br>• Installing, where appropriate, specific traffic calming features, such as bulb-outs and medians. | **Consistent**. Streets included in the project area must comply with Safe Streets requirements. |
| **C-I-7** Ensure that new development is designed to make public transit a viable choice for residents. Options include:<br>• Locate medium-high density development whenever feasible near streets served by public transit; and<br>• Link neighborhoods to bus stops by continuous sidewalks or pedestrian paths. | **Consistent**. The multi-family development projects will be located in the areas likely to be served by transit when service is extended in the future. The project will include sidewalks and pedestrian paths that connect to larger roads that are the likely location of future bus stops. |
| **C-I-2** Establish bicycle lanes, bike routes, and bike paths consistent with the General Plan.<br>**C-I-3** Increase bicycle safety by:<br>• Sweeping and repairing bicycle lanes and paths on a regular basis;<br>• Ensuring that bikeways are delineated and signed in accordance with Caltrans' standards, and lighting is provided, where needed;<br>• Providing bicycle paths or lanes on bridges and overpasses;<br>• Ensuring that all new and improved streets have bicycle-safe drainage grates and are kept free of hazards such as uneven pavement, gravel, and other debris; | **Consistent**. Arterials and collectors extended to serve the project will include bike lanes when the roads are constructed to their ultimate width. Road improvements will be constructed to City of Lemoore standards. |

## Table 8 (cont.): Consistency with Lemoore 2030 General Plan

| General Plan Policy | Project Consistency |
|---|---|
| • Providing adequate signage and markings warning vehicular traffic of the existence of merging or crossing bicycle traffic where bike routes and paths make transitions into or across roadways;<br>• Working with the Lemoore Union School districts to promote classes on bicycle safety in the schools; and<br>• Installing large sidewalks along arterial and median parkway streets so that children may ride safely away from traffic (e.g., Lemoore Avenue and Hanford-Armona Road) | |
| Source: City of Lemoore 2030 General Plan 2008 | |

The project is consistent with General Plan policies related to air quality. Therefore, the project complies with this criterion and would not conflict with or obstruct implementation of the applicable air quality attainment plan.

***Conclusion***

The project's emissions are less than significant for all criteria pollutants and would not result in inconsistency with the AQP for this criterion. The project complies with applicable control measures of the AQP. Therefore, the project is consistent with the AQP, and the impact would be less than significant. In addition, the project is consistent with City of Lemoore General Plan policies related to air quality that will help further the goals of the AQP.

### Level of Significance Before Mitigation

Less than significant impact.

### Mitigation Measures

No mitigation measures are required.

### Level of Significance After Mitigation

Less than significant impact.

## 5.2.2 - Cumulative Criteria Pollutant Impacts

**Impact AIR-2:** **The project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard.**

### Impact Analysis

To result in a less than significant impact, the following criteria must be true:

1. Regional analysis: emissions of nonattainment pollutants must be below the District's regional significance thresholds. This is an approach recommended by the District in its GAMAQI.

2. Summary of projections: the project must be consistent with current air quality attainment plans including control measures and regulations. This is an approach consistent with Section 15130(b) of the CEQA Guidelines.

3. Cumulative health impacts: the project must result in less than significant cumulative health effects from the nonattainment pollutants. This approach correlates the significance of the regional analysis with health effects, consistent with the court decision, *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1219-20.

### *Regional Emissions*

Air pollutant emissions have both regional and localized effects. This analysis assesses the regional effects of the project's criteria pollutant emissions in comparison to SJVAPCD thresholds of significance for short-term construction activities and long-term operation of the project. Localized emissions from project construction and operation are assessed under Impact AIR-3—Sensitive Receptors using concentration-based thresholds that determine if the project would result in a localized exceedance of any ambient air quality standards or would make a cumulatively considerable contribution to an existing exceedance.

The primary pollutants of concern during project construction and operation are ROG, $NO_X$, $PM_{10}$, and $PM_{2.5}$. The SJVAPCD GAMAQI adopted in 2015 contains thresholds for CO, $NO_X$, ROG, $SO_X$, $PM_{10}$, and $PM_{2.5}$.

Ozone is a secondary pollutant that can be formed miles from the source of emissions, through reactions of ROG and $NO_X$ emissions in the presence of sunlight. Therefore, ROG and $NO_X$ are termed ozone precursors. The Air Basin often exceeds the state and national ozone standards. Therefore, if the project emits a substantial quantity of ozone precursors, the project may contribute to an exceedance of the ozone standard. The Air Basin also exceeds air quality standards for $PM_{10}$, and $PM_{2.5}$; therefore, substantial project emissions may contribute to an exceedance for these pollutants. The District's annual emission significance thresholds used for the project define the substantial contribution for both operational and construction emissions as follows:

- 100 tons per year CO
- 10 tons per year $NO_X$
- 10 tons per year ROG
- 27 tons per year $SO_X$
- 15 tons per year $PM_{10}$
- 15 tons per year $PM_{2.5}$

The project does not contain sources that would produce substantial quantities of $SO_2$ emissions during construction and operation. Modeling conducted for the project show that $SO_2$ emissions are well below the SJVAPCD GAMAQI thresholds, as shown in the modeling results contained in Appendix A. No further analysis of $SO_2$ is required.

#### *Construction Emissions*

Construction emissions were modeled using the CalEEMod version 2016.3.2. The results of the modeling are presented in Table 9. The highest emissions that would occur in any year of construction activity were compared with the significance threshold. The emissions reflect compliance with SJVAPCD regulations that apply to construction activities. For assumptions in estimating the emissions, please refer to Section 4, Modeling Parameters and Assumptions. As shown in Table 9, the

emissions are below the significance thresholds in each construction year. Therefore, the emissions are less than significant on a project basis.

### Table 9: Construction Air Pollutant Emissions Summary

| Year | Emissions (tons per year) | | | | |
|---|---|---|---|---|---|
| | ROG | $NO_X$ | CO | $PM_{10}$ | $PM_{2.5}$ |
| Phase 1 2022 | 0.37 | 3.43 | 3.03 | 0.53 | 0.30 |
| Phase 1 2023 | 0.28 | 2.21 | 2.64 | 0.27 | 0.14 |
| Phase 1 2024 | 0.26 | 2.10 | 2.61 | 0.26 | 0.13 |
| Phase 1 2025 | 1.60 | 0.74 | 1.09 | 0.08 | 0.04 |
| Phase 2 2026 | 0.32 | 2.89 | 2.96 | 0.56 | 0.27 |
| Phase 2 2027 | 0.28 | 2.42 | 2.77 | 0.38 | 0.15 |
| Phase 2 2028 | 0.28 | 2.40 | 2.72 | 0.38 | 0.15 |
| Phase 2 2029 | 1.26 | 0.85 | 1.13 | 0.12 | 0.05 |
| Phase 3 2030 | 0.24 | 1.33 | 2.35 | 0.25 | 0.12 |
| Phase 3 2031 | 0.19 | 1.17 | 2.21 | 0.08 | 0.04 |
| Phase 3 2032 | 0.97 | 0.33 | 0.68 | 0.02 | 0.01 |
| Phase 4 2034 | 0.27 | 1.44 | 2.44 | 0.36 | 0.18 |
| Phase 4 2035 | 0.18 | 1.11 | 2.22 | 0.09 | 0.03 |
| Phase 4 2036 | 0.18 | 1.11 | 0.22 | 0.09 | 0.03 |
| Phase 4 2037 | 1.34 | 0.42 | 1.02 | 0.03 | 0.02 |
| **Grand Total for All Years of Construction** | **8.01** | **23.96** | **30.10** | **3.52** | **1.66** |
| ***Highest Construction Emissions in Any Year*** | ***1.34*** | ***3.43*** | ***3.03*** | ***0.56*** | ***0.30*** |
| Significance threshold (tons/year) | 10 | 10 | 100 | 15 | 15 |
| Exceed threshold—significant impact? | No | No | No | No | No |

Notes:
$PM_{10}$ and $PM_{2.5}$ emissions are from the mitigated output to reflect compliance with Regulation VIII—Fugitive $PM_{10}$ Prohibitions.
ROG = reactive organic gases $NO_X$ = nitrogen oxides $PM_{10}$ and $PM_{2.5}$ = particulate matter
Calculations use unrounded numbers.
Source: CalEEMod output (Appendix A).

*Operational Emissions*

Operational emissions occur over the lifetime of the project and are from two main sources: area sources and motor vehicles, or mobile sources. First occupancy expected in late 2022. Project buildout is expected to occur in approximately 16 years. The apartments and the park are included in Phase 1 and Phase 2. Phase 3 and Phase 4 are only single-family residential. The SJVAPCD considers construction and operational emissions separately when making significance determinations. For assumptions in estimating the emissions, please refer to Section 4, Modeling Parameters and Assumptions. The emissions modeling results for project operation are summarized in Table 10.

As shown in Table 10, the emissions are below the SJVAPCD significance thresholds prior to application of mitigation measures. The project emissions include credit for compliance with regulations and project design features that would reduce project emissions. The results are presented for the total with each phase modeled separately and at buildout using a single model run for 2038. The emissions in both cases would result in a less than significant impact.

### Table 10: Operational Air Pollutant Emissions

| Phase and Year | Emissions (tons per year) | | | | |
|---|---|---|---|---|---|
| | ROG | $NO_X$ | CO | $PM_{10}$ | $PM_{2.5}$ |
| Phase 1 2022 | 2.40 | 2.87 | 10.39 | 1.29 | 0.65 |
| Phase 2 2026 | 1.68 | 1.54 | 5.90 | 1.65 | 0.47 |
| Phase 3 2030 | 1.23 | 0.95 | 3.48 | 1.20 | 0.34 |
| Phase 4 2034 | 1.63 | 1.22 | 4.10 | 1.65 | 0.47 |
| **Total Project Emissions All Phases** | **6.94** | **6.57** | **23.87** | **5.79** | **1.93** |
| **Total Project Emissions Buildout 2038** | **6.33** | **5.28** | **16.94** | **6.86** | **1.94** |
| Significance threshold | 10 | 10 | 100 | 15 | 15 |
| Exceed threshold—significant impact? | No | No | No | No | No |

Notes:
ROG = reactive organic gases $NO_X$ = nitrogen oxides $PM_{10}$ and $PM_{2.5}$ = particulate matter
Area source emissions include emissions from natural gas, landscape, and painting.
Source: CalEEMod output (Appendix A).

***Step 2: Plan Approach***

Section 15130(b) of the CEQA Guidelines states the following:

> The following elements are necessary to an adequate discussion of significant cumulative impacts: 1) Either: (A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or (B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact.

In accordance with CEQA Guidelines 15130(b), this analysis of cumulative impacts is based on a summary of projections analysis. The District attainment plans are based on a summary of projections that accounts for projected growth throughout the Air Basin, and the controls needed to achieve ambient air quality standards. This analysis considers the current CEQA Guidelines, which includes the amendments approved by the Natural Resources Agency, effective on December 28, 2018. The Air Basin is in nonattainment or maintenance status for ozone and particulate matter ($PM_{10}$ and $PM_{2.5}$), which means that concentrations of those pollutants currently exceed the ambient air quality standards for those pollutants, or that the standards have recently been attained in the case of pollutants with maintenance status. When concentrations of ozone, $PM_{10}$, or $PM_{2.5}$ exceed

the ambient air quality standard, then those sensitive to air pollution (such as children, the elderly, and the infirm) could experience health effects such as: decrease of pulmonary function and localized lung edema in humans and animals; increased mortality risk; and risk to public health, implied by altered connective tissue metabolism, altered pulmonary morphology in animals after long-term exposures, and pulmonary function decrements in chronically exposed humans. See Section 2.3—Existing Air Quality Conditions for additional correlation of the health impacts with the existing pollutant concentrations experienced in the Fresno area.

Under the CEQA Guidelines, cumulative impacts may be analyzed using other plans that evaluate relevant cumulative effects. The geographic scope for cumulative criteria pollution from air quality impacts is the Air Basin, because that is the area in which the air pollutants generated by the sources within the Air Basin circulate and are often trapped. The SJVAPCD is required to prepare and maintain air quality attainment plans and a State Implementation Plan to document the strategies and measures to be undertaken to reach attainment of ambient air quality standards. While the SJVAPCD does not have authority over land use decisions, it is recognized that changes in land use and circulation planning would help the Air Basin achieve clean air mandates. The District evaluated emissions from land uses and transportation in the entire Air Basin when it developed its attainment plans. Emission inventories used to predict attainment of NAAQS must be based on the latest planning assumptions for mobile sources.

In accordance with CEQA Guidelines Section 15064, subdivision (h)(3), a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project complies with the requirements in a previously approved plan or mitigation program.

The history and development of the SJVAPCD's current Ozone Attainment Plan is described in Section 2.4, Air Quality Plans. The 2007 8-Hour Ozone Plan contains measures to achieve reductions in emissions of ozone precursors, and sets plans towards attainment of ambient ozone standards by 2023. The 2012 $PM_{2.5}$ Plan and the 2015 $PM_{2.5}$ Plan for the 1997 $PM_{2.5}$ Standard require fewer $NO_X$ reductions to attain the $PM_{2.5}$ standard than the Ozone Plan, so the Ozone Plan is considered the applicable plan for reductions of the ozone precursors $NO_X$ and ROG. The 2012 $PM_{2.5}$ Plan requires reductions in directly emitted $PM_{2.5}$ from combustion sources, such as diesel engines and fireplaces, and from fugitive dust to attain the ambient standard and is the applicable plan for $PM_{2.5}$ emissions. $PM_{2.5}$ is also formed in secondary reactions in the atmosphere involving $NO_X$ and ammonia to form nitrate particles. Reductions in $NO_X$ required for ozone attainment are also sufficient for $PM_{2.5}$ attainment. As discussed in Impact AIR-1, the project is consistent with all applicable control measures in the air quality attainment plans. The project would comply with any District rules and regulations that may pertain to implementation of the AQPs. Therefore, impacts would be less than significant with regard to compliance with applicable rules and regulations.

This project does not exceed SJVAPCD thresholds and will reduce its cumulative impact through compliance with Rule 9510; therefore, the project is considered less than significant for this criterion.

### *Project Health Impacts*

In the 5$^{th}$ District Court of Appeal case *Sierra Club v. County of Fresno (Friant Ranch, L.P.)*, the Court found the project EIR deficient because it did not identify specific health-related effects resulting

from the estimated amount of pollutants generated by the project. The ruling stated that the EIR should give a "sense of the nature and magnitude of the 'health and safety problems' caused by a project's air pollution. The EIR should translate the emission numbers into adverse impacts or to understand why such translation is not possible at this time (and what limited translation is, in fact, possible)."

The standard measure of the severity of impact is the concentration of pollutant in the atmosphere compared to the ambient air quality standard for the pollutant for a specified period of time. The severity of the impact increases with the concentration and the amount of time that people are exposed to the pollutant. The change in health impacts with concentration is described in Table 3 and Table 4 using the EPA's Air Quality Index. The pollutants of concern in the Friant Ranch ruling were regional criteria pollutants ozone, and $PM_{10}$. It is important to note that the potential for localized impacts can be addressed through dispersion modeling. The SJVAPCD includes screening criteria that if exceeded would require dispersion modeling to determine if project emissions would result in a significant health impact. For this project, no significant localized health impacts would occur. Regional pollutants require more complex modeling as described below.

Ozone concentrations are estimated using regional photochemical models because ozone formation is subject to temperature, inversion strength, sunlight, emissions transport over long distances, dispersion, and the regional nature of the precursor emissions. The emissions from individual projects are too small to produce a measurable change in ozone concentrations—it is the cumulative contribution of emissions from existing and new development that is accounted for in the photochemical model. Ozone concentrations vary widely throughout the day and year even with the same amount of daily emissions. The SJVAPCD indicated in an Amicus Brief on Friant Ranch that running the photochemical model with just Friant Ranch emissions (109.5 tons/year $NO_X$) is not likely to yield valid information given the relative scale involved. A copy of the SJVAPCD brief is included in Appendix B. The $NO_X$ inventory for the San Joaquin Valley is 224 tons per day in 2019 or 81,760 tons per year. Friant Ranch would result in 0.13 percent increase in $NO_X$ emissions. A project emitting at the SJVAPCD CEQA threshold of 10 tons per year would result in a 0.01 percent increase in $NO_X$ emissions. Most project emissions are generated by motor vehicle travel distributed on regional roadways miles from the project site, and these emissions are not conducive to project-level concentration-based modeling.

Emissions throughout the San Joaquin Valley are projected to markedly decline in the coming decade. The SJVAPCD 2016 Ozone Plan predicts $NO_X$ emissions will decline to 103 tons per day by 2029 or 54 percent from 2019 levels through implementation of control measures included in the plan. This means that ozone health impacts to residents of the San Joaquin Valley will be lower than currently experienced and most areas of the San Joaquin Valley will have attained ozone air quality standards. The plan accounts for growth in population at rates projected by the State of California for the San Joaquin Valley, so only cumulative projects that would exceed regional growth projections would potentially delay attainment and prolong the time and the number of people would experience health impacts. It is unlikely that anyone would experience greater impacts from regional emissions than currently occur. The federal transportation conformity regulation provides a means of ensuring growth in emissions does not exceed emission budgets for each County. Regional Transportation Plans and Regional Transportation Improvement Plans must provide a conformity analysis based on the latest planning assumptions that demonstrates that budgets will be not be

exceeded. If budgets are exceeded, the San Joaquin Valley may be subject to Clean Air Act sanctions until the deficiency is addressed.

Particulate emission impacts can be localized and regional. Particulates can be directly emitted and can be formed in the atmosphere with chemical reactions. Small directly emitted particles such as diesel emissions and other combustion emissions can remain in the atmosphere for a long time and can be transported over long distances. Large particles such as fugitive dust tend to be deposited a short distance from where emitted but can also travel long distances during periods of high winds. Particulates can be washed out of the atmosphere by rain and deposited on surfaces. Secondary particulates formed in the atmosphere such as ammonium nitrate require $NO_X$ and ammonia, and they require low inversion levels and certain ranges of temperature and humidity to result in substantial concentrations. These complications make modeling project particulate emissions to determine concentration feasible only for directly emitted particles at receptor locations close to the project site. Regional particulate concentrations are modeled using a gridded inventory (emissions in tons/day are placed a 4-kilometer, three-dimensional grid to spatially allocate the emissions geographically and vertically in the atmosphere) and an atmospheric chemistry component to simulate the chemical reactions. The model uses relative reduction factors to determine the amount of reductions of each PM component will be needed to attain the air quality standards on the days with the conditions most favorable to high particulate concentrations. A small project would not produce sufficient emissions to determine a project's individual contribution to the particulate concentration.

### *Step 3: Cumulative Health Impacts*

The Air Basin is in nonattainment for ozone, $PM_{10}$ (State only), and $PM_{2.5}$, which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to protect public health, including the health of sensitive individuals (such as children, the elderly, and the infirm). Therefore, when the concentration of those pollutants exceeds the standard, it is likely that some sensitive individuals in the population would experience health effects that were described in Table 1. However, the health effects are a factor of the dose-response curve. Concentration of the pollutant in the air (dose), the length of time exposed, and the response of the individual are factors involved in the severity and nature of health impacts. If a significant health impact results from project emissions, it does not mean that 100 percent of the population would experience health effects. Table 2, Table 3, and Table 4 relate the pollutant concentration experienced by residents using air quality data for the nearest air monitoring station to the health impacts ascribed to those concentrations by the EPA Air Quality Index. This provides a more detailed look at the actual impacts currently experienced by area residents.

Since the Basin is nonattainment for ozone, $PM_{10}$, and $PM_{2.5}$, it is considered to have an existing significant cumulative health impact without the project. When this occurs, the analysis considers whether the project's contribution to the existing violation of air quality standards is cumulatively considerable. The SJVAPCD regional thresholds for $NO_X$, VOC, $PM_{10}$, or $PM_{2.5}$ are applied as cumulative contribution thresholds. Projects that exceed the regional thresholds would have a cumulatively considerable health impact. As shown in Table 9 and Table 10, the regional analysis of construction and operational emissions indicates that the project would not exceed the District's significance thresholds and the project is consistent with the applicable Air Quality Plan.

The SJVAPCD Air Quality Attainment Plans predict that nonattainment pollutant emissions will continue to decline each year as regulations adopted to reduce these emissions are implemented, accounting for growth projected for the region. Therefore, the cumulative health impact will also decline even with the project's emission contribution.

### Level of Significance Before Mitigation

Less than significant impact.

### Mitigation Measures

No mitigation measures are required.

### Level of Significance After Mitigation

Less than significant impact.

## 5.2.3 - Sensitive Receptors

**Impact AIR-3: The project would not expose sensitive receptors to substantial pollutant concentrations.**

### Impact Analysis

#### *Sensitive Receptors*

Those who are sensitive to air pollution include children, the elderly, and persons with pre-existing respiratory or cardiovascular illness. The District considers a sensitive receptor a location that houses or attracts children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Examples of sensitive receptors include hospitals, residences, convalescent facilities, and schools. The closest off-site sensitive receptors are existing residences located adjacent to the project site to the north, east, south, and west. As a residential land use development project, proposed residences included as part of the project would be considered sensitive receptors once occupied.

#### *Off-site Sensitive Receptors*

Impacts to receptors located outside the project boundaries would occur primarily during project construction. Construction emissions commencing with the year 2020 and continue until project buildout. Construction activities are expected to occur over several years as the subdivision is gradually built out; however, most emissions are expected to occur during the initial site preparation and grading activities and to a lesser extent during ground-up construction. For criteria pollutants, impacts to receptors located outside of the project are based on emissions during the highest emissions during any construction year. As shown in Table 11 and Table 12, emissions generated from construction and operation of the project are less than SJVAPCD screening criteria. Therefore, this impact would be less than significant.

#### *On-site Sensitive Receptors*

The project is not a significant source of TAC emissions. Construction activities produce short-term emissions that would not contribute substantially to cancer risk, which is estimated on a 70-year exposure period.

### *Construction: ROG*

ROG is emitted during the application of architectural coatings (painting). The amount emitted is dependent on the amount of ROG (or VOC) in the paint. ROG emissions are typically an indoor air quality health hazard concern rather than an outdoor air quality health hazard concern. Therefore, exposure to ROG during architectural coatings is a less than significant health impact.

There are three types of asphalt that are typically used in paving: asphalt cements, cutback asphalts, and emulsified asphalts. However, SJVAPCD Rule 4641 prohibits the use of the following types of asphalt: rapid cure cutback asphalt; medium cure cutback asphalt; slow cure asphalt that contains more than one-half (0.5) percent of organic compounds that evaporate at 500 degrees Fahrenheit (°F) or lower; and emulsified asphalt containing organic compounds, in excess of 3 percent by volume, that evaporate at 500°F or lower. An exception to this is medium cure asphalt when the National Weather Service official forecast of the high temperature for the 24-hour period following application is below 50°F.

The acute (short-term) health effects from worker direct exposure to asphalt fumes include irritation of the eyes, nose, and throat. Other effects include respiratory tract symptoms and pulmonary function changes. The studies were based on occupational exposure of fumes. Residents are not in the immediate vicinity of the fumes; therefore, they would not be subjected to concentrations high enough to evoke a negative response. In addition, the restrictions that are placed on asphalt in the San Joaquin Valley reduce ROG emissions from asphalt and exposure. The impact to nearby sensitive receptors from ROG during construction would be less than significant.

## Localized Pollutant Screening Analysis

Emissions occurring at or near the project have the potential to create a localized impact, also referred to as an air pollutant hotspot. Localized emissions are considered significant if, when combined with background emissions, they would result in exceedance of any health-based air quality standard. The impact from localized pollutants is based on the impact to the nearest sensitive receptor.

The SJVAPCD's GAMAQI includes screening thresholds for identifying projects that need detailed analysis for localized impacts. Projects with on-site emission increases from construction activities or operational activities that exceed the 100 pounds per day screening level of any criteria pollutant after compliance with Rule 9510 and implementation of all enforceable mitigation measures would require preparation of an ambient air quality analysis. The criteria pollutants of concern for localized impact in the SJVAB are $PM_{10}$, $PM_{2.5}$, $NO_X$, and CO. There is no localized emission standard for ROG and most types of ROG are not toxic and have no health-based standard; however, ROG was included for informational purposes only.

The highest daily emissions occur during project grading activities except for ROG emissions, which are highest during application of architectural coatings during each phase. The results of the construction screening analysis are presented in Table 11. The project would not exceed SJVAPCD thresholds for localized criteria pollutant emissions; therefore, this impact is considered less than significant.

## Table 11: Maximum Daily Air Pollutant Emissions during Construction

| Maximum Daily Emissions by Phase | Emissions (pounds per day) | | | | |
|---|---|---|---|---|---|
| | ROG | $NO_X$ | CO | $PM_{10}$ | $PM_{2.5}$ |
| Phase 1 | 55.00 | 38.89 | 29.66 | 9.89 | 5.99 |
| Phase 2 | 42.35 | 27.98 | 26.78 | 9.37 | 5.51 |
| Phase 3 | 52.44 | 13.87 | 23.36 | 8.72 | 4.95 |
| Phase 4 | 45.93 | 13.86 | 23.29 | 8.71 | 4.95 |
| **Highest Emissions in Any Year** | **55.00** | **38.89** | **29.66** | **9.89** | **5.99** |
| Screening Thresholds | 100 | 100 | 100 | 100 | 100 |
| Exceeds Threshold (Yes or No) | No | No | No | No | No |

Notes:
$NO_X$ = nitrogen oxides    CO = carbon monoxide    $PM_{10}$ and $PM_{2.5}$ = particulate matter
N/A = Not applicable
Emissions shown are from the summer model output except for $NO_x$, which is higher during the winter. There is no ambient air quality standard for ROG.
Source: CalEEMod output (Appendix A).

### Maximum Daily Operational Emissions

An analysis of maximum daily emissions during operation was conducted to determine if emissions would exceed 100 pounds per day for any pollutant of concern. The maximum daily operational emissions would occur at project buildout, which is assumed to occur by 2038. Operational emissions include emissions generated on-site by area sources such as natural gas combustion and landscape maintenance, and off-site by motor vehicles accessing the project. Most motor vehicle emissions would occur distant from the site and would not contribute to a violation of ambient air quality standards; therefore, only emissions from vehicles operating within0.5 mile of the site were included in the assessment. The results of the screening analysis are presented in Table 12.

## Table 12: Maximum Daily Air Pollutant Emissions during Operations

| Maximum Daily Emissions per Source Category | Emissions (pounds per day) | | | | |
|---|---|---|---|---|---|
| | ROG | $NO_X$ | CO | $PM_{10}$ | $PM_{2.5}$ |
| Area | 30.76 | 7.56 | 64.66 | 0.90 | 0.90 |
| Energy | 0.48 | 4.08 | 1.74 | 0.33 | 0.33 |
| Mobile | 0.47 | 1.64 | 4.92 | 2.73 | 0.74 |
| **Total** | **31.70** | **13.29** | **71.31** | **3.96** | **1.96** |
| Screening threshold | 100 | 100 | 100 | 100 | 100 |
| Exceed screening threshold? | No | No | No | No | No |

Notes:
$NO_X$ = nitrogen oxides    CO = carbon monoxide    $PM_{10}$ and $PM_{2.5}$ = particulate matter
N/A = Not applicable
Emissions shown are from the summer model output. There is no ambient air quality standard for ROG.
Source: CalEEMod output (Appendix A).

The project would not exceed SJVAPCD screening thresholds for localized operational criteria pollutant impacts; therefore, the project's localized criteria pollutant impacts would be less than significant.

### *Operation: ROG*

During operation, ROG would be emitted primarily from motor vehicles. Direct exposure to ROG from project motor vehicles would not result in health effects, because the ROG would be distributed across miles and miles of roadway and in the air. The concentrations would not be great enough to result in direct health effects.

### *Operation: $PM_{10}$, $PM_{2.5}$, CO, $NO_2$*

As shown in Table 12, localized emissions of $PM_{10}$, $PM_{2.5}$, CO, and $NO_2$ would not exceed the SJVAPCD screening thresholds at full project buildout. Residential development is an insignificant source of these pollutants, except for projects that allow woodburning devices that emit $PM_{10}$, $PM_{2.5}$ in wood smoke. The project will include only natural gas-fueled fireplaces and inserts that are insignificant sources of $PM_{2.5}$ and $PM_{10}$. Therefore, the project would not expose sensitive receptors to substantial criteria air pollutant concentrations during operation.

### *Carbon Monoxide Hot Spot Analysis*

Localized high levels of CO are associated with traffic congestion and idling or slow-moving vehicles. The SJVAPCD provides screening criteria to determine when to quantify local CO concentrations based on impacts to the level of service (LOS) of intersections in the project vicinity.

Construction of the project would result in minor increases in traffic for the surrounding road network during the duration of construction. Motor vehicles accessing the site when it becomes operational would result in a minor increase in daily trips that would not substantially reduce the LOS on roads serving the site. The highest background 8-hour average CO concentration during the latest year it was monitored is 2.06 ppm, which is 78 percent lower than the CAAQS of 9.0 ppm or the NAAQS of 9 ppm.

The SJVAPCD screening threshold for CO impacts is triggered when Level of Service (LOS) on one or more streets or at one or more intersections in the project vicinity will be reduced to LOS E or F; or the project will substantially worsen an already existing LOS F on one or more streets or at more or more intersections in the project vicinity. No intersections in the vicinity of the project vicinity currently have an LOS of E or F and the project traffic study indicates that no intersections would operate at LOS E or F with the construction of intersection improvements required of the project. CO emissions are predicted to continue to decline as old vehicles are retired and cleaner new motor vehicles take their place. Therefore, no CO hotspot modeling is required for the project.

### *Construction: Toxic Air Contaminants*

Project construction would involve the use of diesel-fueled vehicles and equipment that emit DPM, which is considered a TAC. The SJVAPCD's latest threshold of significance for TAC emissions is an increase in cancer risk for the maximally exposed individual of 20 in a million (formerly 10 in a million). The SJVAPCD's 2015 GAMAQI does not currently recommend analysis of TAC emissions from project construction activities, but instead focuses on projects with operational emissions that would expose sensitive receptors over a typical lifetime of 70 years. Residential projects produce limited

amounts of TAC emissions during operation and thus have not been subject to project TAC analysis. Most emissions from construction activities occur during the grading and site preparation phases that occur over the first three months of construction of individual tracts and do not overlap with project operations. Limited amounts of diesel equipment are used during ground-up construction of individual houses that occurs during the majority of the construction schedule when some units may be occupied. Construction equipment fleet operators are subject to ARB's In Use Offroad Equipment Fleet Regulation, which requires the use of increasing amounts of lower-emitting equipment that will help to ensure that risk would not exceed SJVAPCD thresholds.

Construction phase risks would be considered acute health risks as opposed to cancer risks, which are long-term. OEHHA has yet to define acute risk factors for diesel particulates that would allow the calculation of a hazards risk index; thus, evaluation of this impact would be speculative and no further discussion is necessary.

### *Operation: Toxic Air Contaminants*

The ARB Air Quality and Land Use Handbook contains recommendations that will "help keep California's children and other vulnerable populations out of harm's way with respect to nearby sources of air pollution" (ARB 2005), including recommendations for distances between sensitive receptors and certain land uses. In the *California Building Industry Association v. Bay Area Air Quality Management District*, 62 Cal.4th 369 (2015) (Case No. S213478) the California Supreme Court held that "agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future users or residents. But when a proposed project risks exacerbating those environmental hazards or conditions that already exist, an agency must analyze the potential impact of such hazards on future residents or users. In those specific instances, it is the project's impact on the environment—and not the environment's impact on the project—that compels an evaluation of how future residents or users could be affected by exacerbated conditions." Although the Court ruled that impacts from the existing environment on projects are not required to be addressed under CEQA, land uses such as gasoline stations, dry cleaners, distribution centers, and auto body shops can expose residents to high levels of TAC emissions if they are close to the project site. Information regarding the location of existing TAC sources is provided for disclosure purposes only and not as a measure of the project's significance under CEQA.

Consistency with these recommendations is assessed as follows:

- Heavily traveled roads. ARB recommends avoiding new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day. Epidemiological studies indicate that the distance from the roadway and truck traffic densities were key factors in the correlation of health effects, particularly in children. The project is located at the northern edge of the City of Lemoore in an area that is currently rural with limited existing traffic. Traffic volumes on roads near the project will be a small fraction of the amounts recommended by ARB. Therefore, no roads serving the project would exceed this criterion.
- Distribution centers. ARB also recommends avoiding siting new sensitive land uses within 1,000 feet of a distribution center. The project is not located within 1,000 feet of a distribution center.

- Fueling stations. ARB recommends avoiding new sensitive land uses within 300 feet of a large fueling station (a facility with a throughput of 3.6 million gallons per year or greater). ARB recommends a 50-foot separation is recommended for typical gas dispensing facilities. The nearest gas station is located at 1110 N. Lemoore Avenue, approximately 0.49 mile south of the project site.
- Dry cleaning operations. ARB recommends avoiding siting new sensitive land uses within 300 feet of any dry-cleaning operation that uses perchloroethylene. For operations with two or more machines, ARB recommends a buffer of 500 feet. For operations with three or more machines, ARB recommends consultation with the local air district. The nearest dry-cleaning operation is approximately 0.52 mile south of the project site at 111 E. Hanford-Armona Road.
- Auto body shops. Auto body shops have the potential to emit TACs related to painting. The nearest auto body shop is located at 4113 E. Street, 1.2 miles south of the project site, which is beyond the distance that would result in a measurable impact.

### *Valley Fever*

Valley fever, or coccidioidomycosis, is an infection caused by inhalation of the spores of the fungus, *Coccidioides immitis* (*C. immitis*). The spores live in soil and can live for an extended time in harsh environmental conditions. Activities or conditions that increase the amount of fugitive dust contribute to greater exposure, and they include dust storms, grading, and recreational off-road activities.

The San Joaquin Valley is considered an endemic area for Valley fever. By geographic region, hospitalizations for Valley fever in the San Joaquin Valley increased from 230 (6.9 per 100,000 population) in 2000 to 701 (17.7 per 100,000 population) in 2007. Within the region, Kern County reported the highest hospitalization rates, increasing from 121 (18.2 per 100,000 population) in 2000 to 285 (34.9 per 100,000 population) in 2007, and peaking in 2005 at 353 hospitalizations (45.8 per 100,000 population). The Centers for Disease Control and Prevention indicates that 752 of the 8,657 persons (8.7 percent) hospitalized in California between 2000 and 2007 for Valley fever died (CDC 2009). California experienced 6,880 new cases of Valley fever in 2019. A total of 164 Valley fever cases were reported in Kings County in 2019 (CDPH 2020).

The distribution of *C. immitis* within endemic areas is not uniform and growth sites are commonly small (a few tens of meters) and widely scattered. Known sites appear to have some ecological factors in common suggesting that certain physical, chemical, and biological conditions are more favorable for *C. immitis* growth. Avoidance, when possible, of sites favorable for the occurrence of *C. immitis* is a prudent risk management strategy. Listed below are ecologic factors and sites favorable for the occurrence of *C. immitis*:

1) Rodent burrows (often a favorable site for *C. immitis*, perhaps because temperatures are more moderate and humidity higher than on the ground surface)
2) Old (prehistoric) Indian campsites near fire pits
3) Areas with sparse vegetation and alkaline soils
4) Areas with high salinity soils
5) Areas adjacent to arroyos (where residual moisture may be available)

6) Packrat middens
7) Upper 30 centimeters of the soil horizon, especially in virgin undisturbed soils
8) Sandy, well-aerated soil with relatively high water-holding capacities

Sites within endemic areas less favorable for the occurrence of *C. immitis* include:

1) Cultivated fields
2) Heavily vegetated areas (e.g., grassy lawns)
3) Higher elevations (above 7,000 feet)
4) Areas where commercial fertilizers (e.g., ammonium sulfate) have been applied
5) Areas that are continually wet
6) Paved (asphalt or concrete) or oiled areas
7) Soils containing abundant microorganisms
8) Heavily urbanized areas where there is little undisturbed virgin soil (USGS 2000).

The project site is situated in a city growth area. The project includes urbanization of a site that was formerly used for agricultural purposes. Therefore, implementation of the project would have a low probability of the site having *C. immitis* growth sites and exposure to the spores from disturbed soil.

Construction activities would generate fugitive dust that could contain *C. immitis* spores. The project will minimize the generation of fugitive dust during construction activities by complying with the District's Regulation VIII. Therefore, this regulation, combined with the relatively low probability of the presence of *C. immitis* spores, would reduce Valley fever impacts to less than significant.

During operations, dust emissions are anticipated to be negligible, because most of the project area would be occupied by buildings, pavement, and landscaped areas. This condition would preclude the possibility of the project from providing habitat suitable for *C. immitis* spores and for generating fugitive dust that may contribute to Valley fever exposure. Impacts would be less than significant.

### *Naturally Occurring Asbestos*

According to a map of areas where naturally occurring asbestos in California are likely to occur (U.S. Geological Survey 2011), there are no such areas in the project area. Therefore, development of the project is not anticipated to expose receptors to naturally occurring asbestos. Impacts would be less than significant.

In summary, the project would not exceed SJVAPCD localized emission daily screening levels for any criteria pollutant. The project is not a significant source of TAC emissions during construction or operation. The project is not in an area with suitable habitat for Valley fever spores and is not in area known to have naturally occurring asbestos. Therefore, the project would not result in significant impacts to sensitive receptors.

### Level of Significance Before Mitigation

Less than significant impact.

### Mitigation Measures

No mitigation measures are required.

### Level of Significance After Mitigation

Less than significant impact.

## 5.2.4 - Objectionable Odors

**Impact AIR-4: The project would not create objectionable odors affecting a substantial number of people.**

### Impact Analysis

#### *Thresholds of Significance*

Odor impacts on residential areas and other sensitive receptors, such as hospitals, day-care centers, schools, etc. warrant the closest scrutiny, but consideration should also be given to other land uses where people may congregate, such as recreational facilities, worksites, and commercial areas.

Two situations create a potential for odor impact. The first occurs when a new odor source is located near an existing sensitive receptor. The second occurs when a new sensitive receptor locates near an existing source of odor. According to the *CBIA v. BAAQMD* ruling, impacts of existing sources of odors on the project are not subject to CEQA review. Therefore, the analysis to determine if the project would locate new sensitive receptors near an existing source of odor is provided for information only. The District has determined the common land use types that are known to produce odors in the Air Basin. These types are shown in Table 13.

**Table 13: Screening Levels for Potential Odor Sources**

| Odor Generator | Screening Distance |
|---|---|
| Wastewater Treatment Facilities | 2 miles |
| Sanitary Landfill | 1 mile |
| Transfer Station | 1 mile |
| Composting Facility | 1 mile |
| Petroleum Refinery | 2 miles |
| Asphalt Batch Plant | 1 mile |
| Chemical Manufacturing | 1 mile |
| Fiberglass Manufacturing | 1 mile |
| Painting/Coating Operations (e.g., auto body shop) | 1 mile |
| Food Processing Facility | 1 mile |
| Feed Lot/Dairy | 1 mile |
| Rendering Plant | 1 mile |
| Source: SJVAPCD 2015a. | |

According to the SJVAPCD GAMAQI, analysis of potential odor impacts should be conducted for the following two situations:

- **Generators:** projects that would potentially generate odorous emissions proposed to locate near existing sensitive receptors or other land uses where people may congregate, and
- **Receivers:** residential or other sensitive receptor projects or other projects built for the intent of attracting people located near existing odor sources.

### *Project Analysis*

*Project as a Generator*

Land uses that are typically identified as sources of objectionable odors include landfills, transfer stations, sewage treatment plants, wastewater pump stations, composting facilities, feed lots, coffee roasters, asphalt batch plants, and rendering plants. The project would not engage in any of these activities. Therefore, the project would not be considered a generator of objectionable odors during operations.

During construction, the various diesel-powered vehicles and equipment in use on-site would create localized odors. These odors would be temporary and would not likely be noticeable for extended periods of time beyond the project's site boundaries. The potential for diesel odor impacts would therefore be less than significant.

*Project as a Receiver*

With the *CBIA v. BAAQMD* ruling, analysis of odor impacts on receivers is not required for CEQA compliance. Therefore, the following analysis is provided for information only.

As a residential development, the project has the potential to place sensitive receptors near existing odor sources. Review of the area near the project site found no major odor-generating sources (as listed in Table 13) within screening distance of the site. Therefore, the uses in the vicinity of the project would not cause substantial odor impacts to the project.

## Level of Significance Before Mitigation

Less than significant impact.

## Mitigation Measures

No mitigation measures are required.

## Level of Significance After Mitigation

Less than significant impact.

# SECTION 6: GREENHOUSE GAS IMPACT ANALYSIS

## 6.1—CEQA Guidelines

CEQA Guidelines define a significant effect on the environment as "a substantial, or potentially substantial, adverse change in the environment." To determine if a project would have a significant impact on GHGs, the type, level, and impact of emissions generated by the project must be evaluated.

The following GHG significance thresholds are contained in Appendix G of the CEQA Guidelines, which were amendments adopted into the Guidelines on March 18, 2010, pursuant to SB 97 and most recently amended December 28, 2019. A significant impact would occur if the project would:

(a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or

(b) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

## 6.2—Impact Analysis

### 6.2.1 - Greenhouse Gas Inventory

**Impact GHG-1: The project would generate direct and indirect greenhouse gas emissions; however, these emissions would not result in a significant impact on the environment.**

#### Impact Analysis

***Threshold of Significance***

Section 15064.4(b) of the CEQA Guidelines' 2018 amendments for GHG emissions states that a lead agency may take into account the following three considerations in assessing the significance of impacts from GHG emissions.

- **Consideration #1**: The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting.
- **Consideration #2**: Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
- **Consideration #3**: The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project. In determining the significance of impacts, the lead agency may consider a project's consistency with the State's long-term

> climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is not cumulatively considerable.

The City of Lemoore has not yet adopted its own GHG thresholds or prepared a Greenhouse Gas Reduction Plan that can be used as a basis for determining project significance; therefore, an alternative analysis approach is required. In the absence of a local plan, CEQA allows lead agencies to use statewide or regional plans that reduce or mitigate the project's incremental contribution of greenhouse gas emissions. The SJVAPCD's *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* includes thresholds based on whether the project will reduce or mitigate GHG levels by 29 percent from BAU levels compared with 2005 levels by 2020 (SJVAPCD 2009b). The required reduction to meet the 2020 target was reduced to 21.7 percent from BAU to reflect lower growth in emissions due to the 2008 recession. First occupancy at the project site is expected to occur in 2022 with full buildout in 2038. These dates are beyond the AB 32 2020 milestone year and the SJVAPCD has not updated its guidance to address the SB 32 2030 targets. Therefore, an approach based on consistency with State plans to achieve 2030 targets and continued progress toward meeting the goals for 2045 and 2050 in Executive Orders signed by the Governor has been used.

The State emission inventory was below the 2020 target in 2016, 2017, and 2018 and appears to be on track to stay below the target by the end of 2020. Therefore, it is now appropriate to focus on the next legislated target from SB 32, which is to reduce emissions by 40 percent below 1990 levels by 2030. Occupancy of the first dwelling units constructed at the project site is expected to occur in 2022, which is two years after the AB 32 target year. Full buildout of the project is expected to take up to 16 years depending on market conditions. Until a new threshold is identified for projects constructed after-2020, significance is based on making continued progress toward the SB 32 2030 target and the later Executive Order goals.

A quantitative analysis was prepared for this project to determine the extent to which it may increase or reduce greenhouse gas emissions as compared to the existing environmental setting to fulfill Consideration 1.

Consideration 2 requires the identification of a threshold applicable to the project acceptable to the Lead Agency. The City has not developed its own threshold, but has used SJVAPCD thresholds for previous projects. However, since the SJVAPCD guidance was adopted in 2009, regulations on sources of GHG emissions applicable to development projects have been implemented that will achieve in excess of a 29 percent reduction from BAU for most projects. A BAU analysis is provided to demonstrate that the project would exceed the current 21.7 percent reduction and the previous SJVAPCD 29 percent reduction threshold.

The analysis also addresses consistency with the SB 32 targets and the 2017 Scoping Plan Update with an assessment of the project's reduction from BAU based on emissions in 2038 compared with the 21.7 percent reduction and with a consistency analysis. This approach provides estimates of project emissions after the new 2030 milestone year with the existing threshold to address Considerations 1 and 2 above.

The ARB adopted the 2017 Scoping Plan Update on December 14, 2017. The plan provides the State's strategy to achieve the SB 32 2030 target of a 40 percent reduction in emissions compared to 1990 levels. The plan includes existing and new measures that when implemented are expected to achieve the SB 32 2030 target. The 2017 Scoping Plan achieves substantial reductions beyond 2020 through continued implementation of existing regulations. Other regulations will be adopted to implement recently enacted legislation including SB 350, which requires an increase in renewable energy from 33 percent to 50 percent and doubling the efficiency of existing buildings by 2030. The Legislature extended the Cap-and-Trade Program through 2030. Cap-and-Trade provides a mechanism to make up shortfalls in other strategies if they occur (ARB 2017c). In addition, the strategy relies on reductions achieved in implementing the ARB Short-Lived Climate Pollutant (SLCP) Reduction Strategy to reduce pollutants not previously controlled for climate change such as black carbon, $CH_4$, and hydrofluorocarbons (ARB 2017b).

## Newhall Ranch

On November 30, 2015, the California Supreme Court issued its decision in *Newhall Ranch,* invalidating the GHG analysis for a large master planned residential development in Los Angeles County consisting of over 20,000 residential dwelling units and other uses. In particular, the Court upheld: (1) use of the statewide emissions reduction goal in AB 32 as a significance criterion (pp. 15–19), (2) use of the Scoping Plan's BAU model "as a comparative tool for evaluating efficiency and conservation efforts" of the Project (pp. 18–19), and (3) a comparison of the project's expected emissions to a BAU model rather than a baseline of pre-project conditions (pp. 15–19). The Court invalidated the GHG analysis on the grounds that the "administrative record discloses no substantial evidence that the Newhall Ranch's project-level reduction of 31 percent in comparison to [BAU] is consistent with achieving AB 32's statewide goal of a 29 percent reduction from [BAU]." The Court indicated that a lead agency may use a BAU comparison based on the Scoping Plan's methodology if it also substantiates the reduction a particular project must achieve to comply with statewide goals. The Court suggested a lead agency could examine the "data behind the Scoping Plan's business-as-usual model" to determine the necessary project-level reductions from new land use development at the proposed location (p. 25). A lead agency "might assess consistency with A.B. 32's goal in whole or part by looking to compliance with regulatory programs designed to reduce greenhouse gas emissions from particular activities."

The substantial evidence needed to support a project BAU threshold can be derived from data used to develop the Scoping Plan inventory and control strategy, and from analysis conducted by the ARB to track progress in achieving the AB 32 2020 target. The critical factor in determining the appropriate project threshold is whether the State requires additional reductions beyond those achieved by existing regulations in order to achieve its target. If no additional reductions are required from individual projects, no nexus exists to require a project to mitigate its emissions. In that case, the percentage reductions achieved by projects through compliance with regulations is the amount needed to reach the AB 32 target.

The State's regulatory program implementing the 2008 Scoping Plan is now fully mature. All regulations envisioned in the Scoping Plan have been adopted by the responsible agencies and the effectiveness of those regulations have been estimated by the agencies during the adoption process and then are tracked to verify their effectiveness after implementation. The combined effect of this successful effort is that the State now projects that it will meet the 2020 target and achieve continued progress toward meeting post-2020 targets. Governor Brown, in the introduction to

Executive Order B-30-15, states "California is on track to meet or exceed the current target of reducing greenhouse gas emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (AB 32)."

The Supreme Court was concerned that new development may need to do more than existing development to reduce GHGs to demonstrate that it is doing its fair share of reductions. As will be shown below, new development does do more than existing development and, because of the nature of the sources of GHG emissions related to development, existing development is equally responsible for reducing emissions from the most important sources of emissions. It is important to note that most of the State's regulatory program applies to both new and existing development.

The Scoping Plan reduction from BAU accounts for growth projected in the State and assumes that existing development would continue to emit GHGs at the same rate that occurred in the base year (2002-2004 average). The California Department of Finance (DOF) Report E-5 predicts that population growth in California will grow by 8.1 percent between 2020 and 2030, so existing development will be responsible for 92 percent of the emissions that occur in 2030. If measures to reduce emissions from existing development were not available, new development could not provide sufficient reductions to reach the 2030 target even if their emissions were reduced to net zero.

The State's regulatory program is able to target both new and existing development because the two most important strategies—motor vehicle fuel efficiency and emissions from electricity generation—obtain reductions equally from existing and new sources. This is because all vehicle operators use cleaner low carbon fuels and buy vehicles subject to the fuel efficiency regulations, and all building owners or operators purchase cleaner energy from the grid that is produced by increasing percentages of renewable fuels. This includes regulations on mobile sources such as: The Pavley standards that apply to all vehicles purchased in California, the Low Carbon Fuel Standard (LCFS) that applies to all fuel used in California, and the Renewable Portfolio Standard and Renewable Energy Standard that apply to utilities providing electricity to all California homes and businesses. The reduction strategy where new development is required to do more than existing development is building energy efficiency and energy use related to water conservation regulations. For example, new projects are subject to Title 24 Energy Efficiency standards and CALGreen Code and Model Water Efficient Landscape Ordinance (MWELO) water conservation requirements. Residential buildings constructed to the 2013 Title 24 standards use 25 percent less energy than buildings complying with the 2008 standards. The version of Title 24 effective January 1, 2017 improves energy efficiency in residential buildings by 28 percent compared to the 2013 Title 24 standards and 46 percent compared with 2008 Title 24 standards. New buildings and landscapes are much more energy efficient and water efficient than the development that has been built over the past decades and will require much less energy. The 2019 Title 24 standards which become effective in January 2020 makes progress toward achieving net zero energy use through requirements for on-site renewable generation for most projects. The project buildings would be constructed after 2020 and would be required to comply with 2019 Title 24 standards.

The Scoping Plan strategy will achieve greater than average reductions from energy and mobile source sectors that are the primary sources related to development projects, and lower than average reductions from other sources such as agriculture. The amount of reduction estimated by the ARB for each sector was based on technical feasibility and cost effectiveness. The State GHG inventory

has been below the 2020 target since 2016; therefore, the reductions achieved by new and existing development are more than adequate. Achieving the SB 32 2030 target will require an approximate 40 percent reduction from 2020 levels. The 2017 Scoping Plan Update identifies a range of reduction amounts expected from each emission sector, but an amount needed for development's fair share of reductions have not been determined.

As suggested by the Court, a project BAU analysis was prepared for this project that assesses "consistency with AB 32's goal in whole or part by looking to compliance with regulatory programs designed to reduce greenhouse gas emissions from particular activities." The analysis shows the extent to which the project complies with adopted regulations and the additional amount that will be achieved through project design features. At this point in time, no additional reductions are required from new development beyond regulations for the State to achieve its 2020 target. The recently adopted 2030 target will require a reduction from 431 $MTCO_2e$ to 260 $MTCO_2e$ or 40 percent from 1990 levels. After accounting for projected growth of approximately 0.8 percent per year an average decrease of 5.2 percent per year from the State GHG inventory will be required to achieve the target. The 2017 Scoping Plan Update includes a strategy for achieving the needed reductions, but does not identify an amount required specifically from new development. However, all GHG emission sources within development projects are subject to GHG regulations.

Therefore, this analysis demonstrates consistency by showing progress toward achieving the 2030 target and post-2030 goals. The quantitative analysis prepared for the project provides the reduction from BAU in the 2038 buildout year to show the progress anticipated prior to applying reductions from new strategies contained in the 2017 Scoping Plan Update. The new reduction strategies from the plan are designed to close the gap between existing commitments and those needed to achieve the 2030 target, but many of the strategies must go through a regulatory process to be implemented. Therefore, the amount of reductions needed from new development beyond regulations, if any, is uncertain.

The analysis prepared for the project also includes qualitative assessments of compliance with 2008 Scoping Plan, the 2017 Scoping Plan Update, and City of Lemoore 2030 General Plan to support GHG significance findings under Impact GHG-2.

To determine significance, the analysis first quantifies project-related GHG emissions under a BAU scenario, and then compares these emissions with emissions that would occur when all project-related design features are accounted for, and when compliance with applicable regulatory measures is assumed. The standard and methodology is explained in further detail below.

### *Impact Analysis*

*Construction*

Total GHG emissions generated during all phases of construction were combined and are presented in Table 14. The SJVAPCD does not recommend assessing the significance of construction-related emissions. However, other jurisdictions, such as the SCAQMD and the SMAQMD, have concluded that construction emissions should be included since they may remain in the atmosphere for years after construction is complete. In order to account for the construction emissions, amortizations of the total emissions generated during construction were based on the life of the development (residential—30 years) and added to the operational emissions.

## Table 14: Construction Greenhouse Gas Emissions

| Phase/Year | $MTCO_2e$ per year |
|---|---|
| Phase 1 2022 | 577.85 |
| Phase 1 2023 | 520.77 |
| Phase 1 2024 | 519.68 |
| Phase 1 2025 | 193.29 |
| Phase 2 2026 | 695.92 |
| Phase 2 2027 | 718.48 |
| Phase 2 2028 | 709.68 |
| Phase 2 2029 | 241.63 |
| Phase 3 2030 | 502.06 |
| Phase 3 2031 | 414.09 |
| Phase 3 2032 | 116.78 |
| Phase 4 2034 | 570.94 |
| Phase 4 2035 | 438.26 |
| Phase 4 2036 | 439.94 |
| Phase 4 2037 | 180.79 |
| **Total** | **6,840.15** |
| ***Amortized over 30 years*** | ***228.01*** |

Notes:
Calculation totals use unrounded numbers from CalEEMod output.
$MTCO_2e$ = metric tons of carbon dioxide equivalents
Source: CalEEMod output (Appendix A).

*Operation*

Operational or long-term emissions occur over the life of the project. Sources of emissions may include motor vehicles and trucks, energy usage, water usage, waste generation, and area sources, such as landscaping activities and residential wood burning.

### *Business As Usual Operational Emissions*

Operational emissions under the BAU scenario were modeled using CalEEMod 2016.3.2. Modeling assumptions for the year 2005 were used to represent 2038 BAU conditions (without the benefit of regulations adopted to reduce GHG emissions). The SJVAPCD guidance recommends using emissions in 2002–2004 in the baseline scenario to represent conditions—as if regulations had not been adopted—to allow the effect of projected growth on achieving reduction targets to be clearly defined. CalEEMod defaults were used for project energy usage, water usage, waste generation, and area sources (architectural coating, consumer products, and landscaping). The vehicle fleet mix was revised to reflect the residential fleet mix approved by SJVAPCD for 2038, which is when buildout of the final phase of development is expected to occur. Full assumptions and CalEEMod model outputs are provided in Appendix A.

### *2038 Operational Emissions*

Operational emissions were modeled for the year 2038 using CalEEMod. CalEEMod assumes compliance with some, but not all, applicable rules and regulations regarding energy efficiency, vehicle fuel efficiency, renewable energy usage, and other GHG reduction policies, as described in the CalEEMod User's Guide (SCAQMD 2017). The reductions obtained from each regulation and the source of the reduction amount used in the analysis are described below.

*Emissions Accounting for Applicable Regulations*

The following regulations are incorporated into the CalEEMod emission factors:

- Pavley I and Pavley II (LEV III) motor vehicle emission standards
- ARB Medium and Heavy-Duty Vehicle Regulation
- 2005, 2008, 2013, and 2016 Title 24 Energy Efficiency Standards

The following regulations have not been incorporated into the CalEEMod emission factors and require alternative methods to account for emission reductions provided by the regulations:

- Renewable Portfolio Standards (RPS)
- Low Carbon Fuel Standard (LCFS)
- Green Building Code Standards (indoor water use)
- California Model Water Efficient Landscape Ordinance (Outdoor Water)

Pavley II/LEV III standards have been incorporated in the latest version of CalEEMod. ARB estimates a 3 percent reduction in 2020 and a 19 percent reduction from the vehicle categories subject to the regulation by 2030 (ARB 2010b and ARB 2013d).

The ARB GHG Regulation for Medium and Heavy-Duty Engines and Vehicles applies to trucks that will be accessing the project site. The benefits of the regulation were incorporated into CalEEMod 2016.3.2. The ARB estimates that this regulation will reduce GHG emissions from the affected vehicles by 7.2 percent (ARB 2013f).

The Low Carbon Fuel Standard (LCFS) is estimated to achieve a 10 percent reduction in emissions by 2020 and a 20 percent reduction by 2030 (ARB 2010). CalEEMod does not include credit for the LCFS.

Title 24 reductions for 2013 and 2016 updates were added to CalEEMod 2016.3.2. The California Energy Commission (CEC) estimates that 2013 Title 24 standards would result in an increase in energy efficiency of 25 percent in residential buildings compared to 2008 Title 24 (CEC 2014a). An additional 28 percent reduction from the 2008 standards have been credited for compliance with 2016 Title 24. This results in a combined reduction of 46 percent (CEC 2015). Compliance with 2019 Title 24 is expected to reduce residential energy use by 7 percent beyond 2016 Title 24 prior to accounting for the installation of solar panels (CEC 2018). 2019 Title 24 requires new residential development include solar panels to generate electricity. The project is expected to include solar panels on each single-family residential unit in quantities that meet or exceed Title 24 requirements. Apartments also have requirements for solar panels, but the amount can vary due to roof space constraints and other site considerations.

RPS is not accounted for in CalEEMod 2016.3.2. Reductions from RPS are addressed by revising the electricity emission intensity factor in CalEEMod to account for the utility RPS rate forecast for 2020 (CPUC 2016). PG&E provides emission factors for the electricity it provides to customers and projections for its energy portfolio for 2020 that is used to estimate project emissions. No data to reflect compliance in 2030 or 2038 was included in the PG&E projections. The utilities will be required by SB 100 to increase the use of renewable energy sources to 60 percent, but details on individual utility compliance have not been determined.

Energy savings from water conservation resulting from the Green Building Code Standards for indoor water use and California Model Water Efficient Landscape Ordinance for outdoor water use are not included in CalEEMod. The Water Conservation Act of 2009 mandates a 20 percent reduction in urban water use that is implemented with these regulations (CDWR 2013). Benefits of the water conservation regulations are applied in the CalEEMod mitigation component.

Reductions in emissions from solid waste are based on the City achieving the CalRecycle 75 Percent Initiative by 2020 compared with a 50 percent baseline for 2005. Reductions are taken using the CalEEMod mitigation component.

Regulations applicable to project sources and the percent reduction anticipated from each source are shown in Table 15. The percentage reductions are only applied to the specific sources subject to the regulations. For example, the Pavley LEV Standards apply only to light duty cars and trucks.

## Table 15: Reductions from Greenhouse Gas Regulations

| Regulation | Project Applicability | Reduction Source | Percent Reduction in 2020 and 2030 |
|---|---|---|---|
| Pavley Low Emission Vehicle Standards | Light-duty cars and trucks accessing the site are subject to the regulation. | CalEEMod defaults (Pavley I) | 25.1[1] |
| | | Adjusted GHG emission factor (Pavley II/LEV III) in CalEEMod. | 3% 2020<br>19.5% 2030[2] |
| Truck and Bus Regulation | Heavy-duty trucks accessing the site for deliveries and services are subject to the regulation. | Adjusted GHG emission factors for the regulation in CalEEMod | 7.2%[3] |
| Low Carbon Fuel Standard (LCFS) | Vehicles accessing the site will use fuel subject to the LCFS | CalEEMod defaults | 10% 2020<br>20% 2030[1] |
| Title 24 Energy Efficiency Standards | Project buildings will be constructed to meet the latest version of Title 24 (currently 2016). Reduction applies only to energy consumption subject to the regulation. | CalEEMod defaults | 35%[4,5] |
| Green Building Code Standards | The project will include water conservation features required by the standard | CalEEMod mitigation component | 20%[6] |
| Water Efficient Land Use Ordinance | The project landscaping will comply with the regulation | CalEEMod mitigation component | 20%[7] |

## Table 15 (cont.): Reductions from Greenhouse Gas Regulations

| Regulation | Project Applicability | Reduction Source | Percent Reduction in 2020 and 2030 |
|---|---|---|---|
| Renewable Portfolio Standard (RPS) | Electricity purchased for use at the project site is subject to the 33 percent RPS mandate | CalEEMod adjusted energy intensity factors with PG&E emission factors that show the company will exceed the 33 percent mandate. | 54.5%[8] |
| Solid waste | The solid waste service provider will need to provide programs to increase diversion and recycling to meet the 75 percent mandate. | CalEEMod mitigation component | 25%[9] |

Notes:
Regulations are described in Section 2.3 Regulatory Environment. The source of the percentage reductions from each measure are from the following sources:
1 Pavley 1 + Low Carbon Fuel Standard Postprocessor Version 1.0 User's Guide (ARB 2010b)
2 ARB Staff Report for LEV III Amendments (ARB 2013e)
3 ARB Staff Report for GHG Regulations for Medium and Heavy-Duty Engines and Vehicles (ARB 2013f)
4 California Energy Commission News Release: New Title 24 Standards Will Cut Residential Energy Use by 25 Percent, Save Water, and Reduce Greenhouse Gas Emissions (CEC 2014b)
5 California Energy Commission Adoption Hearing Presentation: 2016 Buildings Energy Efficiency Standards (CEC 2015)
6 2013 California Green Building Standards Code Section 5.303.2
7 California Water Plan Update 2013 (CDWR 2013)
8 Based on CalEEMod default PG&E rate for 2005 and PG&E projected emission factor for 2020
9 CalRecycle 75 Percent Initiative: Defining the Future (2016b)

In addition to rules and regulations, the project would incorporate design features and would obtain benefits from its location and infrastructure that would reduce project vehicle miles traveled (VMT) compared with default values. The project would construct pedestrian infrastructure connecting to adjacent land uses. In addition, the project would provide electrical outlets for landscaping equipment that would be used in accordance with statewide usage rates for this type of equipment. The project is located approximately 1.2 miles from existing development in Downtown Lemoore, providing shorter-than-average trip lengths to important destinations.

Note that CalEEMod nominally treats these design elements and conditions as "mitigation measures," despite their inclusion in the project description. Therefore, reported operational emissions are considered to represent unmitigated project conditions. Full assumptions and model outputs are provided in Appendix A and results of this analysis for project buildout in 2038 are presented in Table 16.

## Table 16: Project Operational Greenhouse Gases 2038

| Source | Emissions ($MTCO_2e$ per year) | | |
|---|---|---|---|
| | Business as Usual | 2038 (with Regulation and Design Features) | Percent Reduction |
| Area | 1,023.51 | 336.60 | 67.11% |
| Energy | 2,600.75 | 1,623.29 | 37.6% |
| Mobile | 8,792.91 | 3,899.51 | 55.7% |
| Waste | 330.69 | 248.02 | 25.0% |
| Water | 185.08 | 96.27 | 48.0% |
| Amortized Construction Emissions | 228.01 | 228.01 | 0.0% |
| **Total** | **13,160.93** | **6,431.69** | **51.1%** |
| | Reduction from BAU | **6,729.24** | — |
| | Percent Reduction | **51.1%** | — |
| | Significance Threshold | **21.7%** | — |
| | **Are emissions significant?** | **No** | |

Notes:
$MTCO_2e$ = metric tons of carbon dioxide equivalents
The project achieves the SJVAPCD 29 percent reduction from BAU threshold and the 21.7 percent required to show consistency with AB 32 targets.
Source: CalEEMod output (Appendix A).

As shown in Table 16, the project operations in 2038 would achieve a reduction from BAU of 51.1 percent, which exceeds the 21.7 percent reduction required by the State to achieve the 2020 target by 29.4 percent and the SJVAPCD 29.0 percent target by 21.4 percent. No new threshold has been adopted by the City of Lemoore or the SJVAPCD for the 2030 target so, in the interim, the project must make continued progress toward the SB 32 2030 target.

The project includes design features that would result in reductions in energy use and support walking and bicycling. Measures that are part of the project design do not require additional mitigation measures to ensure they are accomplished.

The 51.1 percent reduction from BAU is 29.4 percent beyond the average reduction required by the State from all sources to achieve the AB 32 2020 target and makes substantial progress toward the SB 32 2030 target and later Executive Order goals, and therefore addresses the concern expressed in Newhall Ranch that projects should likely do more than the average to ensure they are providing a fair share of emission reductions.

The analysis presented above does not include new strategies proposed in the 2017 Scoping Plan Update. The update was adopted in December 2017. The update provides alternatives in terms of their likelihood of implementation and ranges of reduction from the strategies. Measures already authorized by legislation are highly likely to be implemented, while measures requiring new legislation are less likely to go forward. The State is highly likely to incorporate zero net energy

buildings in future updates to Title 24 and now requires solar panels in most residential development. A new round of motor vehicle fuel efficiency standards beyond 2025 when LEV III standards are at their maximum reduction level is highly likely. Changing heavy-duty trucks and off-road equipment to alternative fuels face greater technological hurdles and are less likely to provide dramatic reductions by 2030; however, the ARB recently approved the Advanced Clean Trucks regulation that requires increasing percentages of zero emission trucks between 2024 and 2035 (ARB 2020b). The development of a new Scoping Plan to address post-2030 targets would occur when new targets for 2040 and 2050 are legislated.

The 2030 emission limit is 260 $MMTCO_2e$. The ARB estimates that the 2030 BAU (reference) Inventory will be 392 $MMTCO_2e$—a reduction of 132 $MMCO_2e$, including existing policies and programs but not including known commitments that are already underway. The 2017 Scoping Plan Update includes the estimated GHG emissions by sector compared with 1990 levels that is presented in Table 17. The proposed plan would achieve the bulk of the reductions from Electric Power, Industrial fuel combustion, and Transportation. Cap-and-Trade would provide between 10 and 20 percent of the required reductions depending on the amounts achieved by the other reduction measures.

### Table 17: 2017 Scoping Plan Update Estimated Change in GHG Emissions by Sector

| Scoping Plan Sector | Emissions ($MMTCO_2e$ per year) | | |
|---|---|---|---|
| | 1990 | 2030 Proposed Plan Ranges | Percent Change form 1990 |
| Agriculture | 26 | 24–25 | -4 to -8 |
| Residential and Commercial | 44 | 38–40 | -9 to -14 |
| Electric Power | 108 | 42–62 | -43 to -61 |
| High GWP | 3 | 8–11 | 167 to 267 |
| Industrial | 98 | 77–87 | -11 to -21 |
| Recycling and Waste | 7 | 8–9 | 14 to 29 |
| Transportation (including TCU) | 152 | 103–111 | -27 to -32 |
| Net Sink | -7 | TBD | TBD |
| **Subtotal** | **431** | **300–345** | **-20 to -30** |
| Cap-and-Trade Program | N/A | 40–85 | N/A |
| **Total** | **431** | **260** | **-40** |
| Source: ARB 2017 Scoping Plan Update (ARB 2017c). | | | |

Although 2017 Scoping Plan Update focuses on state agency actions necessary to achieve the 2030 GHG limit, the ARB considers local governments essential partners in achieving California's goals to reduce GHG emissions. The 2030 target will require an increase in the rate of emission reductions compared to what was needed to achieve the 2020 limit, and this will require action and collaboration at all levels, including local government action to complement and support State-level actions. For individual projects, the 2017 Scoping Plan Update suggests that all new land use development implement all feasible measures to reduce GHG emissions. The Scoping Plan does not

define all feasible measures or attribute an amount of reductions required from new development beyond compliance with regulations. When requiring mitigation of a project's fair share of a cumulative impact, the Lead Agency must show the nexus between the project contribution and its fair share of mitigation to reduce the impact to less than cumulatively considerable. A threshold based on local support and collaboration with State actions as described in the 2017 Scoping Plan Update does not lend itself to a quantitative determination of fair share. Requiring developers and future residents of the development to fully mitigate emissions without accounting for compliance with regulations would result in double mitigation, first by the developer and then by the residents purchasing electricity, fuel, and vehicles compliant with regulations in effect at the time of purchase and beyond that would violate constitutional nexus requirements.

In conclusion, the project would achieve reductions of 29.4 percent beyond the ARB 2020 21.7 percent target and 21.4 percent beyond the SJVAPCD 29 percent reduction from BAU requirements from adopted regulations and on-site design features. No new threshold has been adopted by the City for the SB 32 2030 target; however, the reductions from BAU by 2038 are substantial with existing regulations and project design features. Based on this progress and the strong likelihood that the measures included in the 2017 Scoping Plan Update will be implemented, it is reasonable to conclude that the project is consistent with the 2017 Scoping Plan and will contribute a reasonable fair-share contribution to achieving the 2030 target. The fair share may very well be achieved through compliance with increasingly stringent State regulations that apply to new development, such as Title 24 and CALGreen; regulations on energy production, fuels, and motor vehicles that apply to both new and existing development; and voluntary actions to improve energy efficiency in existing development. In addition, compliance with the VMT targets adopted to comply with SB 375 and implemented through the RTP/SCS may be considered to adequately address GHG emissions from passenger cars and light-duty trucks. As shown in Table 17, the State strategy relies on the Cap-and-Trade Program to make up any shortfalls that may occur from the other regulatory strategies. The costs of Cap-and-Trade emission reductions will ultimately be passed on to the consumers of fuels, electricity, and products produced by regulated industries, which include future residents of development projects and other purchasers of products and services. Therefore, the impact in terms of Considerations #1 and #2 would be less than significant.

### Level of Significance Before Mitigation

Less than significant impact.

### Mitigation Measures

No mitigation measures are required.

### Level of Significance After Mitigation

Less than significant impact.

## 6.2.2 - Greenhouse Gas Reduction Plans

**Impact GHG-2: The project would not conflict with any applicable plan, policy, or regulation of an agency adopted to reduce the emissions of greenhouse gases.**

### Impact Analysis

The following analysis assesses the project's compliance with Consideration #3 regarding consistency with adopted plans to reduce GHG emissions. The City of Lemoore 2030 General Plan was adopted in May 2008. The project's consistency with applicable GHG policies from the GHG Reduction Plan policies is assessed below.

The project is also assessed for its consistency with ARB's adopted Scoping Plans. This would be achieved with an assessment of the project's compliance with Scoping Plan measures contained in the 2008 Scoping Plan and the 2017 Scoping Plan Update.

#### *General Plan Compliance*

The City of Lemoore 2030 General Plan was adopted in May 2008. The General Plan contains a number of goals or policies that relate directly to climate change. The General Plan includes a However, some of the policies in the Air Quality and Circulation Element would likely reduce GHG emissions as well as the other criteria pollutant emissions, because they attempt to reduce VMT and increase energy efficiency. As shown in Table 18, the project is consistent with the feasible and applicable policies.

**Table 18: Consistency with General Plan Policies**

| General Plan Policy | Project Consistency |
|---|---|
| **COS-I-38** Compile and update an inventory of greenhouse gas emissions from City operations and track related solid waste, energy, economic, and environmental data. | **Not applicable.** This measure applies to the City and not individual projects. |
| **COS-I-39** Support State efforts to reduce greenhouse gases and emissions through local action that will reduce motor vehicle use, support alternative forms of transportation, require energy conservation in new construction, and energy management in public buildings. | **Consistent.** The project supports State efforts through compliance with adopted GHG regulations on building construction and vehicles that will access the site. |
| **COS-I-40** Prepare a Greenhouse Gas Emissions Reduction Plan, focusing on feasible actions the City can take to minimize the adverse impacts of Plan implementation on climate change and air quality. The Plan will include but will not be limited to:<br>• An inventory of all known, or reasonably discoverable, sources of greenhouse gases (GHGs) that currently exist in the City and sources that existed in 1990. In determining what is a source of GHG emissions, the City may rely on the definition of "greenhouse gas emissions source" or "source" as defined in Section 38505 of the California Global Warming Solutions Act ("AB 32") or its governing | **Not applicable.** This measure applies to the City. No plan has been adopted that would require project compliance. |

## Table 18 (cont.): Consistency with General Plan Policies

| General Plan Policy | Project Consistency |
|---|---|
| regulations. The inventory may include estimates of emissions drawing on available information from to state and regional air quality boards, supplemented by information obtained by the City.<br>• A projected inventory of the new GHGs that can reasonably be expected to be emitted in the year 2030 due to the City's discretionary land use decisions pursuant to the 2030 General Plan Update, as well as new GHGs emitted by the City's internal government operations. The projected inventories will include estimates, supported by substantial evidence, of future emissions from planned land use and information from state and regional air quality boards and agencies.<br>• A target for the reduction of those sources of future emissions reasonably attributable to the City's discretionary land use decisions under the 2030 General Plan and the City's internal government operations, and feasible GHG emission reduction measures whose purpose shall be to meet this reduction target by regulating those sources of GHG emissions reasonably attributable to the City's discretionary land use decisions and the City's internal government operations. | |
| **CD-I-58** Require new development to incorporate passive heating and natural lighting strategies to the extent feasible and practical. These strategies should include, but are not limited to, the following:<br>• Using building orientation, mass and form, including façade, roof, and choice of building materials, color, type of glazing, and insulation to minimize heat loss during winter months and heat gain during the summer months;<br>• Designing building openings to regulate internal climate and maximize natural lighting, while keeping glare to a minimum; and<br>• Reducing heat-island effect of large concrete roofs and parking surfaces. | **Consistent.** The project will comply with Title 24 Building Energy Efficiency Standards that require new homes to be increasingly energy efficient. As the project is built out, new versions of Title 24 will come into effect that would determine the appropriate measures for new construction. |
| **CD-I-60** Incorporate green building standards into the Zoning Ordinance and building code to ensure a high level of energy efficiency in new development, retrofitting projects, and City facilities. These standards should include, but are not limited to, the following:<br>• Require the use of Energy Star® appliances and equipment in new and substantial renovations of residential development, commercial development, and City facilities; | **Consistent.** Since the General Plan was adopted, updates to the Title 24 Energy Efficiency Standards and the CalGreen Code sustainability measures exceed the energy efficiency requirements envisioned by this measure. Solar panels are now required for all single-family development and some multi-family development. With Title 24 updates planned every three years, it is not practical to continuously update the building code to meet or exceed Energy Star and LEED Silver requirements. |

## Table 18 (cont.): Consistency with General Plan Policies

| General Plan Policy | Project Consistency |
|---|---|
| • Require all new City facilities and new residential development incorporate green building methods to qualify for the equivalent of LEED Certified "Silver" rating or better (passive solar orientation must be a minimum component);<br>• Require all new residential development to be pre-wired for optional photovoltaic roof energy systems and/or solar water heating on south facing roofs; and<br>• Require all new projects that will use more than 40,000 kilowatt hours per year of electricity to install photovoltaic energy systems. | |
| **CD-I-61** Adopt a Green Building Design Ordinance. Green Building Design Guidelines may include required and recommended "green" design and construction strategies including: Building Site and Form, Natural Heating or Cooling, Transportation, Building Envelope and Space Planning, Building Materials, Water Systems, Electrical Systems, HVAC Systems, Construction Management, and Commissioning. | **Not applicable.** This measure applies to the City. A Green Building Design Ordinance has not been adopted; however, Title 24 Energy Efficiency Standards and the CalGreen Code fulfill this measure. |
| **CD-I-62** Facilitate environmentally sensitive construction practices by:<br>• Restricting use of chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs) and halons in mechanical equipment and building materials;<br>• Promoting use of products that are durable and allow efficient end-of-life disposal (recyclable);<br>• Requiring subdivision applications on sites greater than five acres to submit a construction waste management plan for City approval;<br>• Promoting the purchase of locally or regionally available materials; and<br>• Promoting the use of cost-effective design and construction strategies that reduce resource and environmental impacts. | **Consistent.** The project will implement construction recycling mandates through compliance with the CalGreen Code. CFCs are now restricted by the ARB Refrigerant Management Program. No large systems using refrigerants are used in residential development. Homes are constructed with materials that are primarily locally and regionally available to the extent possible. |
| Source: City of Lemoore 2030 General Plan. | |

### *AB 32 Scoping Plan*

The California State Legislature adopted AB 32 in 2006. AB 32 focuses on reducing GHGs (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) to 1990 levels by the year 2020. Pursuant to the requirements in AB 32, the ARB adopted the Climate Change Scoping Plan (Scoping Plan) in 2008, which outlines actions recommended to obtain that goal. The 2008 Scoping Plan called a reduction in California's GHG emissions, cutting approximately 30 percent from BAU emission levels projected for 2020, or about 10 percent from 2008 levels. On a

per-capita basis, that means reducing annual emissions of 14 tons of carbon dioxide for every man, woman, and child in California down to about 10 tons per person by 2020. As stated earlier, the ARB updated its emission inventory forecasts and now estimates a reduction of 21.7 percent is required from BAU in 2020 to achieve AB 32 targets. Furthermore, the State GHG inventory achieved the 2020 target in 2016 and maintained emissions below 1990 levels in 2017 and 2018 (ARB 2018a).

The Scoping Plan contains a variety of strategies to reduce the State's emissions. As shown in Table 19, the project is consistent with most of the strategies, while others are not applicable to the project. As discussed earlier, the 2017 Scoping Plan Update strategies primarily rely on increasing the stringency of existing regulations with which the project would continue to comply, support through the project's design, and implementation of the General Plan goals and policies. Although, the project will begin construction after the 2020 target year, many of the measures will continue to be implemented and strengthened to meet the 2030 target required by SB 32.

## Table 19: Project Consistency with AB 32 Scoping Plan

| Scoping Plan Sector | Scoping Plan Measure | Implementing Regulations | Project Consistency |
|---|---|---|---|
| Transportation | California Cap-and-Trade Program Linked to Western Climate Initiative | Regulation for the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanism October 20, 2015 (CCR 95800) | **Consistent.** The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers. However, the regulation indirectly affects people who use the products and services produced by these industrial sources when increased cost of products or services (such as electricity and fuel) are transferred to the consumers. The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, whether generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap-and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and from combustion of other fossil fuels not directly covered at large sources in the Program's first compliance period. |
| | California Light-Duty Vehicle Greenhouse Gas Standards | Pavley I 2005 Regulations to Control GHG Emissions from Motor Vehicles<br>2012 LEV III Amendments to the California Greenhouse Gas and Criteria Pollutant Exhaust and Evaporative Emission Standards | **Consistent**. This measure applies to all new vehicles starting with model year 2012. The project would not conflict with its implementation as it would apply to all new passenger vehicles purchased in California. Passenger vehicles, model year 2012 and later, associated with construction and operation of the project would be required to comply with the Pavley emissions standards. |
| | Low Carbon Fuel Standard. | 2009 readopted in 2015. Regulations to Achieve Greenhouse Gas Emission Reductions Subarticle 7. Low Carbon Fuel Standard CCR 95480 | **Consistent.** This measure applies to transportation fuels utilized by vehicles in California. The project would not conflict with implementation of this measure. Motor vehicles associated with construction and operation of the project would utilize low carbon transportation fuels as required under this measure. |

## Table 19 (cont.): Project Consistency with AB 32 Scoping Plan

| Scoping Plan Sector | Scoping Plan Measure | Implementing Regulations | Project Consistency |
|---|---|---|---|
| | Regional Transportation-Related Greenhouse Gas Targets. | SB 375. Cal. Public Resources Code §§ 21155, 21155.1, 21155.2, 21159.28 | **Consistent**. The project will provide residential development in the region that is consistent with the increased development densities promoted in the 2018 Regional Transportation Plan/Sustainable Communities Strategy (SCS). The project is not within an SCS priority area and so is not subject to requirements applicable to those areas. |
| | Goods Movement | Goods Movement Action Plan January 2007. | **Not applicable**. The project does not propose any changes to maritime, rail, or intermodal facilities or forms of transportation. |
| | Medium/Heavy-Duty Vehicles | 2010 Amendments to the Truck and Bus Regulation, the Drayage Truck Regulation and the Tractor-Trailer Greenhouse Gas Regulation | **Consistent**. This measure applies to medium- and heavy-duty vehicles that operate in the State. The project would not conflict with implementation of this measure. Medium- and heavy-duty vehicles associated with construction and operation of the project would be required to comply with the requirements of this regulation. |
| | High Speed Rail | Funded under SB 862 | **Not applicable**. This is a statewide measure that cannot be implemented by a project applicant or lead agency. |
| Electricity and Natural Gas | Energy Efficiency | Title 20 Appliance Efficiency Regulation | **Consistent.** The project would not conflict with implementation of this measure. The project will comply with the latest energy efficiency standards and incorporate applicable energy efficiency features designed to reduce project energy consumption. |
| | | Title 24 Part 6 Energy Efficiency Standards for Residential and Non-Residential Building | |
| | | Title 24 Part 11 California Green Building Code Standards | |
| | Renewable Portfolio Standard/Renewable Electricity Standard. | 2010 Regulation to Implement the Renewable Electricity Standard (33% 2020) | **Consistent**. PG&E obtained 33 percent of its power supply from renewable sources such as solar and geothermal in 2017, and about 70 percent of the electricity it delivers is carbon-free, including nuclear and large hydroelectric facilities. The owners of residences within the project would purchase power that consists of a greater percentage of renewable sources and could install renewable solar power systems that will assist the utility in achieving exceeding the renewable mandate. |
| | | SB 350 Clean Energy and Pollution Reduction Act of 2015 (50% 2030) | |

## Table 19 (cont.): Project Consistency with AB 32 Scoping Plan

| Scoping Plan Sector | Scoping Plan Measure | Implementing Regulations | Project Consistency |
|---|---|---|---|
| | Million Solar Roofs Program | Tax incentive program | **Consistent.** This measure is intended to increase solar throughout California by means of a variety of electricity providers and existing solar programs. Projects within the plan area will be able to take advantage of incentives that are in place at the time of construction. The project includes installation of solar panels. |
| Water | Water | Title 24 Part 11 California Green Building Code Standards<br>SBX 7-7—The Water Conservation Act of 2009<br>Model Water Efficient Landscape Ordinance | **Consistent.** The project will comply with the California Green Building Standards Code, which requires a 20 percent reduction in indoor water use. The project will also comply with the MWELO as required by the City's development code and water ordinance. |
| Green Buildings | Green Building Strategy | Title 24 Part 11 California Green Building Code Standards | **Consistent.** The State will increase the use of green building practices. The project would implement required green building strategies through existing regulation that requires the project to comply with various CALGreen requirements. The project includes sustainability design features that support the Green Building Strategy. |
| Industry | Industrial Emissions | 2010 ARB Mandatory Reporting Regulation | **Not applicable.** The project is not an industrial land use. |
| Recycling and Waste Management | Recycling and Waste | Title 24 Part 11 California Green Building Code Standards<br>AB 341 Statewide 75 Percent Diversion Goal | **Consistent.** The project would not conflict with implementation of these measures. The project is required to achieve the recycling mandates via compliance with the CALGreen code. The project would utilize City of Lemoore recycling services. |
| Forests | Sustainable Forests | Cap-and-Trade Offset Projects | **Not applicable.** The project site is in an area designated for urban uses. No forested lands exist on-site. |

## Table 19 (cont.): Project Consistency with AB 32 Scoping Plan

| Scoping Plan Sector | Scoping Plan Measure | Implementing Regulations | Project Consistency |
|---|---|---|---|
| High Global Warming Potential | High Global Warming Potential Gases | ARB Refrigerant Management Program CCR 95380 | **Not applicable**. The regulations are applicable to refrigerants used by large air conditioning systems and large commercial and industrial refrigerators and cold storage system. Homes do not use large systems subject to the refrigerant management regulations adopted by ARB. |
| Agriculture | Agriculture | Cap-and-Trade Offset Projects for Livestock and Rice Cultivation | **Not applicable**. The project site is proposed for urban development. No grazing, feedlot, or other agricultural activities that generate manure occur currently exist on-site or are proposed to be implemented by the project. |
| Source of ARB Scoping Plan Reduction Measures: California Air Resources Board 2008. | | | |

In summary, the project incorporates a number of features that would minimize GHG emissions. These features are consistent with project-level strategies identified by the ARB's Scoping Plan and the City of Lemoore 2030 General Plan. The project promotes the goals of the Scoping Plan through implementation of design measures that reduce energy consumption, water consumption, and reduction in VMT.

*Consistency with California's Post-2020 Targets*

The State's executive branch adopted several Executive Orders related to GHG emissions. Executive Orders S-3-05 and B-30-15 are two examples. Executive Order S-3-05 sets goals to reduce emissions to 1990 levels by 2020 and 80 percent below 1990 levels by 2050. The goal of Executive Order S-3-05 to reduce GHG emissions to 1990 levels by 2020 was codified by AB 32. The project, as analyzed above, is consistent with AB 32. Therefore, the project does not conflict with this component of Executive Order S-3-05. Executive Order B-30-15 established an interim goal to reduce GHG emissions to 40 percent below 1990 levels by 2030.

The 2030 goal was codified under SB 32 and is now addressed by the 2017 Scoping Plan Update. The new plan provides a strategy that is capable of reaching the SB 32 target if the measures included in the plan are implemented and achieve reductions within the ranges expected. Under the 2017 Scoping Plan Update, local government plays a supporting role through its land use authority and control over local transportation infrastructure. The Plan Update includes reductions from implementation of SB 375 that applies to VMT from passenger vehicles. Kings County targets for SB 375 are a 5 percent reduction by 2020 and a 10 percent reduction by 2035. SB 375 is implemented with the KCAG Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). The RTP/SCS envisions an increase in development density that would encourage fewer and shorter trips and more trips by transit, walking, and bicycling in amounts sufficient to achieve the SB 375 targets.

Now that the 2017 Scoping Plan has been adopted, new methodologies and threshold approaches are required to determine the fair-share contributions City development projects would need to make to achieve the 2030 target. In the meantime, however, the discussion under "Consistency with SB 32" below addresses the consistency of the proposed project with SB 32, which provides the statutory underpinning of the 2017 Scoping Plan. The SB 32 target requires GHG emissions to be reduced from 1990 levels. No consensus has been reached around the State on a new quantitative target for new development based on consistency with the SB 32 targets.

The Executive Order S-3-05 2050 target has not been codified by legislation. Studies have shown that, in order to meet the 2050 target, aggressive pursuit of technologies in the transportation and energy sectors, including electrification and the decarbonization of fuel, will be required. Because of the technological shifts required and the unknown parameters of the regulatory framework in 2050, quantitatively analyzing the project's impacts further relative to the 2050 goal is speculative for purposes of CEQA (ARB 2014b).

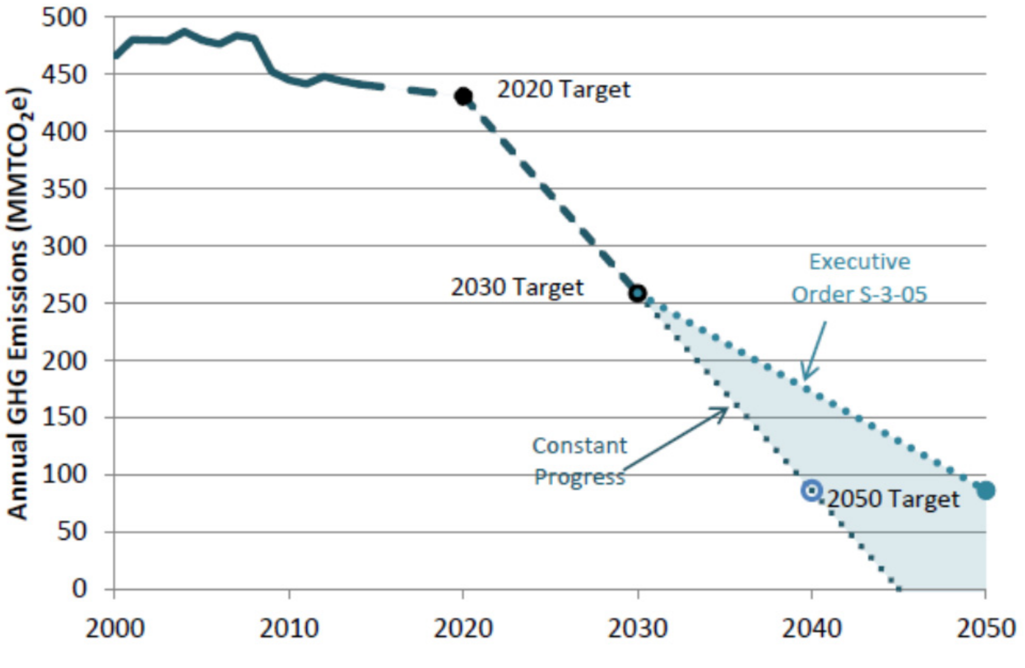
The ARB recognized that AB 32 established an emissions reduction trajectory that will allow California to achieve the more stringent 2050 target: "These [greenhouse gas emission reduction] measures also put the State on a path to meet the long-term 2050 goal of reducing California's GHG emissions to 80 percent below 1990 levels. This trajectory is consistent with the reductions that are needed globally to stabilize the climate." In addition, ARB's First Update "lays the foundation for establishing a

broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050," and many of the emission reduction strategies recommended by ARB would serve to reduce the proposed project's post-2020 emissions level to the extent applicable by law:

- **Energy Sector:** Continued improvements in California's appliance and building energy efficiency programs and initiatives, such as the State's zero net energy building goals, would serve to reduce the proposed project's emissions level. Additionally, further additions to California's renewable resource portfolio would favorably influence the project's emissions level.
- **Transportation Sector:** Anticipated deployment of improved vehicle efficiency, zero emission technologies, lower carbon fuels, and improvement of existing transportation systems all will serve to reduce the project's emissions level.
- **Water Sector:** The project's emissions level will be reduced as a result of further desired enhancements to water conservation technologies.
- **Waste Management Sector:** Plans to further improve recycling, reuse and reduction of solid waste will beneficially reduce the project's emissions level.

For the reasons described above, the project's post-2020 emissions trajectory is expected to follow a declining trend, consistent with the 2030 and 2050 targets. The trajectory required to achieve the post-2020 targets is shown in Figure 8.

**Figure 8: California's Path to Achieving the 2050 Target**




Source: ARB 2017 Scoping Plan Update (ARB 2017c)

In his January 2015 inaugural address, Governor Brown expressed a commitment to achieve "three ambitious goals" that he would like to see accomplished by 2030 to reduce the State's GHG emissions:

- Increasing the State's Renewable Portfolio Standard from 33 percent in 2020 to 50 percent in 2030;
- Cutting the petroleum use in cars and trucks in half; and
- Doubling the efficiency of existing buildings and making heating fuels cleaner.

These expressions of executive branch policy may be manifested in adopted legislative or regulatory action through the state agencies and departments responsible for achieving the State's environmental policy objectives, particularly those relating to global climate change (Brown 2015). Further, recent studies show that the State's existing and proposed regulatory framework will allow the State to reduce its GHG emissions level to 40 percent below 1990 levels by 2030, and to 80 percent below 1990 levels by 2050. Even though these studies did not provide an exact regulatory and technological roadmap to achieve the 2030 and 2050 goals, they demonstrated that various combinations of policies could allow the statewide emissions level to remain very low through 2050, suggesting that the combination of new technologies and other regulations not analyzed in the studies could allow the State to meet the 2050 target (Energy and Economics 2015).

Given the proportional contribution of mobile source-related GHG emissions to the State's inventory, recent studies also show that relatively new trends—such as the increasing importance of web-based shopping, the emergence of different driving patterns by the "millennial" generation, and the increasing effect of web-based applications on transportation choices—are beginning to substantially influence transportation choices and the energy used by transportation modes. These factors have changed the direction of transportation trends in recent years and will require the creation of new models to effectively analyze future transportation patterns and the corresponding effect on GHG emissions. For the reasons described above, the proposed project's post-2020 emissions trajectory is expected to follow a declining trend, consistent with the 2030 and 2050 targets.

*Consistency with SB 32*

The 2017 Climate Change Scoping Plan Update (2017 Scoping Plan) includes the strategy that the State intends to pursue to achieve the 2030 targets of Executive Order S-3-05 and SB 32. The 2017 Scoping Plan includes the following summary of its overall strategy for reaching the 2030 target:

- SB 350
  - Achieve 50 percent Renewables Portfolio Standard (RPS) by 2030 (Now 60 percent with SB 100).
  - Doubling of energy efficiency savings by 2030.
- Low Carbon Fuel Standard (LCFS)
  - Increased stringency (reducing carbon intensity 18 percent by 2030 (now 30 percent with latest revisions to the standard), up from 10 percent in 2020).
- Mobile Source Strategy (Cleaner Technology and Fuels Scenario)
  - Maintaining existing GHG standards for light- and heavy-duty vehicles.
  - Put 4.2 million zero-emission vehicles (ZEVs) on the roads.
  - Increase ZEV buses, delivery and other trucks.

- Sustainable Freight Action Plan
  - Improve freight system efficiency.
  - Maximize use of near-zero emission vehicles and equipment powered by renewable energy.
  - Deploy over 100,000 zero-emission trucks and equipment by 2030.
- Short-Lived Climate Pollutant (SLCP) Reduction Strategy
  - Reduce emissions of methane and hydrofluorocarbons 40 percent below 2013 levels by 2030.
  - Reduce emissions of black carbon 50 percent below 2013 levels by 2030.
- SB 375 Sustainable Communities Strategies
  - Increased stringency of 2035 targets.
- Post-2020 Cap-and-Trade Program
  - Declining caps, continued linkage with Québec, and linkage to Ontario, Canada.
  - ARB will look for opportunities to strengthen the program to support more air quality co-benefits, including specific program design elements. In Fall 2016, ARB staff described potential future amendments including reducing the offset usage limit, redesigning the allocation strategy to reduce free allocation to support increased technology and energy investment at covered entities and reducing allocation if the covered entity increases criteria or toxics emissions over some baseline.
- By 2018, develop Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

Table 20 provides an analysis of the project's consistency with the 2017 Scoping Plan Update measures.

### Table 20: Consistency with SB 32 2017 Scoping Plan Update

| Scoping Plan Measure | Project Consistency |
|---|---|
| **SB 350 50% Renewable Mandate.** Utilities subject to the legislation will be required to increase their renewable energy mix from 33% in 2020 to 50% (now 60%) in 2030. | **Consistent**: The project will purchase electricity from a utility subject to the SB 350 Renewable Mandate. |
| **SB 350 Double Building Energy Efficiency by 2030.** This is equivalent to a 20 percent reduction from 2014 building energy usage compared to current projected 2030 levels | **Not Applicable**. This measure applies to existing buildings. New structures are required to comply with Title 24 Energy Efficiency Standards that are expected to increase in stringency until residential housing achieves zero net energy. |
| **Low Carbon Fuel Standard.** This measure requires fuel providers to meet an 18 percent reduction in carbon content by 2030. | **Consistent**. Vehicles accessing the project site will use fuel containing lower carbon content as the fuel standard is implemented. |
| **Mobile Source Strategy (Cleaner Technology and Fuels Scenario)** Vehicle manufacturers will be required to meet existing regulations mandated by the LEV III and Heavy-Duty Vehicle programs. The strategy includes a goal of having 4.2 million ZEVs on the road by 2030 and increasing numbers of ZEV trucks and buses. | **Consistent**. Project residents can be expected to purchase increasing numbers of more fuel efficient and zero emission cars and trucks each year. The 2016 CALGreen Code requires electrical service in new single-family housing to be EV charger-ready. Home deliveries will be made by increasing numbers of ZEV delivery trucks. |

## Table 20 (cont.): Consistency with SB 32 2017 Scoping Plan Update

| Scoping Plan Measure | Project Consistency |
|---|---|
| **Sustainable Freight Action Plan** The plan's target is to improve freight system efficiency 25 percent by increasing the value of goods and services produced from the freight sector, relative to the amount of carbon that it produces by 2030. This would be achieved by deploying over 100,000 freight vehicles and equipment capable of zero emission operation and maximize near-zero emission freight vehicles and equipment powered by renewable energy by 2030. | **Not Applicable**. The measure applies to owners and operators of trucks and freight operations. However, home deliveries are expected to be made by increasing number of ZEV delivery trucks. |
| **Short-Lived Climate Pollutant (SLCP) Reduction Strategy.** The strategy requires the reduction of SLCPs by 40 percent from 2013 levels by 2030 and the reduction of black carbon by 50 percent from 2013 levels by 2030. | **Consistent**. The project will include only natural gas hearths that produce very little black carbon compared to woodburning fireplaces and heaters. |
| **SB 375 Sustainable Communities Strategies.** Requires Regional Transportation Plans to include a sustainable communities strategy for reduction of per capita vehicle miles traveled. The targets for Kings County are 5 percent by 2020 and 10 percent by 2030. | **Consistent**. The project will provide residential development in the region that is consistent with the Regional Transportation Plan/Sustainable Communities Strategy (SCS) strategy to increase development densities to reduce VMT. The project is not within an SCS priority area and so is not subject to requirements applicable to those areas. |
| **Post-2020 Cap-and-Trade Program.** The Post 2020 Cap-and-Trade Program continues the existing program for another 10 years. The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers. | **Consistent.** The post-2020 Cap-and-Trade Program indirectly affects people who use the products and services produced by the regulated industrial sources when increased cost of products or services (such as electricity and fuel) are transferred to the consumers. The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, whether generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap-and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and from combustion of other fossil fuels not directly covered at large sources in the program's first compliance period. |
| **Natural and Working Lands Action Plan.** The ARB is working in coordination with several other agencies at the federal, state, and local levels, stakeholders, and with the public, to develop measures as outlined in the Scoping Plan Update and the governor's Executive Order B-30-15 to reduce GHG emissions and to cultivate net carbon sequestration potential for California's natural and working land. | **Not Applicable**. The project is residential development and will not be considered natural or working lands. |
| Source: ARB 2017 Scoping Plan Update. | |

Regarding goals for 2050 under Executive Order S-3-05, at this time it is not possible to quantify the emissions savings from future regulatory measures, as they have not yet been developed; nevertheless, it can be anticipated that operation of the project would comply with whatever measures are enacted that state lawmakers decide would lead to an 80 percent reduction below 1990 levels by 2050. In its 2008 Scoping Plan, ARB acknowledged that the "measures needed to meet the 2050 are too far in the future to define in detail." In the First Scoping Plan Update; however, ARB generally described the type of activities required to achieve the 2050 target: "energy demand reduction through efficiency and activity changes; large scale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and rapid market penetration of efficiency and clean energy technologies that requires significant efforts to deploy and scale markets for the cleanest technologies immediately." The 2017 Scoping Plan provides an intermediate target that is intended to achieve reasonable progress toward the 2050 target.

As demonstrated in the impact analysis above, the project would achieve a 51.1 percent reduction from the BAU inventory by 2038 with only adopted regulations and project design features; therefore, the project would not significantly hinder or delay the State's ability to meet the reduction targets contained in AB 32 or SB 32 or conflict with implementation of the Scoping Plan. The project promotes the goals of the Scoping Plan through implementation of design measures that reduce energy consumption, water consumption, and reduction in VMT. Therefore, the project does not conflict with any plans to reduce GHG emissions. The impact would be less than significant.

Accordingly, taking into account the proposed project's emissions, project design features, and the progress being made by the State towards reducing emissions in key sectors such as transportation, industry, and electricity, the project would be consistent with State GHG Plans and would further the State's goals of reducing GHG emissions to 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050, and does not obstruct their attainment.

### Level of Significance Before Mitigation

Less than significant impact.

### Mitigation Measures

No mitigation measures are required.

### Level of Significance After Mitigation

Less than significant impact.

# SECTION 7: ENERGY

## 7.1—CEQA Guidelines

CEQA requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy. Appendix F of the CEQA Guidelines applies to the direct and indirect impact analysis, as well as the cumulative impact analysis.

## 7.2—Impact Analysis

### 7.2.1 - Energy

**Impact ENERGY-1: The project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation.**

#### Impact Analysis

***Threshold of Significance***

Appendix F does not prescribe a threshold for the determination of significance. Rather, Appendix F focuses on reducing and minimizing inefficient, wasteful, and unnecessary consumption of energy. Therefore, for the purposes of this EIR, a significant impact to energy would result if the project would:

1. Result in the wasteful and inefficient use of nonrenewable resources during its construction.
2. Result in the wasteful and inefficient use of nonrenewable resources during long-term operation.
3. Be inconsistent with Adopted Plans and Policies.

*Construction Energy Consumption*

Project construction is assumed to be completed over 16 years. Construction activities would consume energy through the operation of heavy off-road equipment, trucks, and worker traffic. Construction equipment fuel consumption for each of was based on equipment lists generated using CalEEMod default values. The fuel consumption of off-road equipment calculated in this analysis is based on an SCAQMD estimated fuel consumption rate of 0.05 gallon per horsepower-hour and the horsepower, usage hours, and load factors from CalEEMod model runs prepared for the project's air quality analysis.

Based on the anticipated construction schedule and hours of use, construction equipment would result in the consumption of approximately 1,219,180 gallons of diesel fuel over the entire 16-year construction period.

Worker, vendor, and haul trips would result in approximately 3,971,682 VMT over the entire construction period. A countywide average fuel consumption of 40.0 miles per gallon (mpg) for

employee vehicles and 9.8 mpg for vendor trucks were obtained from EMFAC 2017. The results indicate that construction trips would consume approximately 101,002 gallons of motor vehicle fuel.

Although the proposed project would result in the consumption of an estimated 1,219,180 gallons of diesel and 101,002 gallons of motor vehicle fuels during construction, the project is expected to achieve energy efficiencies typical for residential projects in California. Construction equipment fleet turnover and increasingly stringent state and federal regulations on engine efficiency, combined with local, state, and federal regulations limiting engine idling times and require recycling of construction debris, would further reduce the amount of transportation fuel demand during project construction. Considering these reductions in transportation fuel use, the proposed project would not result in the wasteful and inefficient use of energy resources during construction and impacts would be less than significant. Detailed modeling results are provided in Appendix A. Construction energy use is summarized in Table 21.

**Table 21: Construction Energy Consumption**

| Activity | Variable | Consumption Rate | Consumption Amount |
|---|---|---|---|
| Construction Equipment Diesel Fuel Use | hp-hr of equipment use per project<br>Hours of Use | 0.05 gal/hp-hr<br><br>219,200 hours | 1,219,180 gallons (diesel) |
| Construction Employee VMT | VMT/Project | VMT = 3,951,324<br>mpg = 40.0 | 98,904 gallons (gasoline) |
| Construction Vendor Truck VMT | VMT/Project | VMT = 20,448<br>mpg = 9.75 | 2,097 gallons (diesel) |

Notes:
mpg = miles per gallon VMT = vehicle miles traveled hp-hr = horsepower per hour
Source of data for construction and VMT: CalEEMod 2016.3.2
Source of Kings County mpg for 2038: EMFAC 2017.
Modeling results are provided in Appendix A.

*Operation Energy Consumption*

Long-term energy consumption associated with the project includes electricity and natural gas consumption by residents, energy required for water supply, treatment, distribution, and wastewater treatment, and motor vehicle travel.

*Electricity and Natural Gas Consumption*

During operations the proposed project would consume natural gas for space heating, water heating, and cooking associated with the land uses on the project site. The natural gas consumption was estimated using the CalEEMod default values and results. The results of the analysis indicate that the project would consume approximately 16,178,030 thousand British thermal units (kBTU) per year of natural gas per year during operation.

In addition to the consumption of natural gas, the proposed project would use electricity for lighting, appliances, and other uses associated with the project. Electricity use during operations was estimated using CalEEMod default values. The results of the modeling indicate that the project would use approximately 5,698,288 kilowatt-hours (kWh) of electricity per year. Title 24 (2019)

requires the installation of solar panels in residential developments. The number of panels installed can vary be due to local conditions and project design. In addition, some projects may use community solar instead of rooftop solar installations. Although the energy estimates assume no solar will be installed, most electricity used by the residential portions of the project is expected to be generated by zero emission renewable sources.

As described above, the proposed project would result in a long-term increase in demand for electricity from PG&E. However, the project would be designed to meet the most recent Title 24 standards. Title 24 specifically establishes energy efficiency standards for residential and non-residential buildings constructed in the State of California in order to reduce energy demand and consumption. Title 24 is updated periodically to incorporate and consider new energy efficiency technologies and methodologies. Therefore, impacts from the wasteful or inefficient use of electricity or natural gas during operation of the project would be less than significant.

*Water Treatment, Conveyance, and Distribution*

Water used for indoor and outdoor purposes requires electricity for water treatment, conveyance, and distribution. The project's water demand was calculated from default values for the residential development using CalEEMod. Based on this methodology, the proposed project is estimated to use approximately 39.1 million gallons of indoor water per year as well as 32.2 million gallons of outdoor water per year. This would result in the consumption of approximately 324,540 kWh of electricity per year.

Although the proposed project would result in electricity use from the treatment, conveyance, and distribution of water to the project site, the project would also require all water fixtures to be compliant with the 2013 California Green Building Standards Code and landscaping compliant with the MWELO, which would reduce the amount of water used by the project and would require compliance with regulations relating to drought conditions. Therefore, the project would not result in the wasteful or inefficient use of electricity for water treatment, conveyance, and distribution and impacts would be less than significant.

*Wastewater Service*

The project would be served by the City of Lemoore Wastewater Plant. Project wastewater generation was estimated using CalEEMod default assumptions for indoor water use required by the project land uses. Project indoor water use of 39.1 million gallons per year would result in the use of 211,811 kWh of electricity per year. Compliance with the 2013 California Green Building Standards Code, would reduce the wastewater generated by the project. Energy used for treating project wastewater will increasingly be generated by renewable energy sources to comply with RPS standards that apply to the energy utility serving the project area.

Wastewater service would require an extension of sewer lines to the treatment plant. The energy added for the extension and use of these facilities combined with the project's estimated electricity and natural gas consumption would not result in substantial new energy generation or transmission infrastructure due to the location and capacity of existing energy infrastructure near the project site. Additionally, the project would be constructed over about 16 years, allowing for gradual expansion of facilities. Therefore, the project would not result in the wasteful or inefficient use of electricity for wastewater treatment, and impacts would be less than significant.

*Motor Vehicle Fuel Consumption*

During operation of the proposed project, vehicle trips would be generated by the project. The project was modeled with CalEEMod using ITE 10th Edition vehicle trip generation rates and default trip lengths. The results show that the vehicle trips generated would result in approximately 17,822,665 VMT per year. Based on a countywide average fuel consumption of 25.79 mpg from EMFAC 2017 for all vehicle classifications for 2038, the proposed project would result in the consumption of an estimated 691,069 gallons per year of transportation fuel.

Various federal and state regulations including the Low Carbon Fuel Standard, Pavley Clean Car Standards, and Low Emission Vehicle Program would serve to reduce the project's transportation fuel consumption progressively into the future. In addition, the project will include bike lanes, and pedestrian infrastructure that will increase trips by walking and bicycling. Therefore, the project would be designed to avoid the wasteful and inefficient use of transportation fuel during operations and impacts would be less than significant.

State and federal regulatory requirements addressing fuel efficiency are expected to increase fuel efficiency over time as older, less fuel-efficient vehicles are retired. The efficiency standards and light/heavy vehicle efficiency/hybridization programs, contribute to increased fuel efficiency and therefore would reduce vehicle fuel energy consumption rates over time. The annual vehicular energy consumption calculated for the proposed project was based on 2038 average rates for Kings County. While the project would increase the consumption of gasoline and diesel proportionately with projected population growth, the increase would be accommodated within the projected growth as part of the energy projections for the state and the region and would not require the construction of new regional energy production facilities. Therefore, energy impacts related to fuel consumption/efficiency during project operations would be less than significant.

*Impact Summary*

As described above, the project would result in the wasteful, inefficient, or unnecessary use of energy due to project design features that will comply with the City's design guidelines and regulations that apply to the project such as Title 24 Building Energy Efficiency Standards and the California Green Building Standards Code that apply to residential buildings. The installation of solar panels required by 2019 Title 24 standards is expected to offset most electricity used by project residences. Furthermore, various federal and state regulations including the Low Carbon Fuel Standard, Pavley Clean Car Standards, and Low Emission Vehicle Program would serve to reduce the transportation fuel demand by the project.

With the adherence to the increasingly stringent building and vehicle efficiency standards as well as implementation of the project's design features that would reduce energy consumption, the proposed project would not contribute to a cumulative impact to the wasteful or inefficient use of energy. As such, the project would not result in a significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation. A summary of the project's estimated operational energy consumption is provided in Table 22.

**Table 22: Operational Energy Consumption**

| Activity | Variable | Consumption Rate | Consumption Amount |
|---|---|---|---|
| Residential Electricity | 547 SFR DU<br>204 MFR DU | 8,761 kWh/DU/Yr. SFR<br>4,678 kWh/DU/Yr. MFR | SFR 4.75 MWh/Yr.<br>MFR 0.944 MWh/Yr. |
| Residential Natural Gas | | 26,145 kBTU/DU/Yr. SFR<br>14,136 kBTU/DU/Yr. MFR | SFR 13,442,900 kBTU/Yr.<br>MFR 2,735,130 kBTU/Yr. |
| Water Supply, Treatment, and Conveyance and Wastewater Treatment | Water Use (Mgal) | 71.4 Mgal/year | 324,540 kWh/year |
| Transportation | VMT/year<br>mpg all Fuels | VMT/year = 17,822,665 miles<br>mpg = 25.8 | 691,069 gallons/year Transportation Fuels |

Notes:
mpg = miles per gallon Mgal = million gallons VMT = vehicle miles traveled DU = Dwelling Unit
kW = kilowatts kWh = kilowatt-hours MWh = megawatt-hours MMBTU = million British thermal units
Source of data for energy use and VMT: CalEEMod 2016.3.2.
Source of Kings County mpg for 2038: EMFAC 2017.
Modeling results are provided in Appendix A.

### Level of Significance Before Mitigation

Less than significant impact.

### Mitigation Measures

No mitigation measures are required.

### Level of Significance After Mitigation

Less than significant impact.

## 7.2.2 - Renewable Energy or Energy Efficiency Plans

**Impact ENERGY-2: The project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.**

### Impact Analysis

The City of Lemoore has not adopted local plans specifically addressing renewable energy and energy efficiency. However, the City of Lemoore 2030 General Plan includes goals and policies related to energy efficiency. The following policies are applicable to new development:

- **CD-I-58** Require new development to incorporate passive heating and natural lighting strategies to the extent feasible and practical. These strategies should include, but are not limited to, the following:
  - Using building orientation, mass and form, including façade, roof, and choice of building materials, color, type of glazing, and insulation to minimize heat loss during winter months and heat gain during the summer months;

  - Designing building openings to regulate internal climate and maximize natural lighting, while keeping glare to a minimum; and
  - Reducing heat-island effect of large concrete roofs and parking surfaces.
- **CD-I-60** Incorporate green building standards into the Zoning Ordinance and building code to ensure a high level of energy efficiency in new development, retrofitting projects, and City facilities. These standards should include, but are not limited to, the following:
  - Require the use of Energy Star® appliances and equipment in new and substantial renovations of residential development, commercial development, and City facilities;
  - Require all new City facilities and new residential development incorporate green building methods to qualify for the equivalent of LEED Certified “Silver” rating or better (passive solar orientation must be a minimum component);
  - Require all new residential development to be pre-wired for optional photovoltaic roof energy systems and/or solar water heating on south facing roofs; and
  - Require all new projects that will use more than 40,000 kilowatt hours per year of electricity to install photovoltaic energy systems.

The City of Lemoore 2030 General Plan was adopted in 2008. Since that time, Title 24 Building Energy Efficiency Standards have been revised on multiple occasions to increase the energy efficiency of buildings in California. The standards include provisions for windows, insulation, and lighting that have substantially increased the energy efficiency of residential and non-residential structures with the goal of producing all zero net energy buildings by 2030. Therefore, compliance with Title 24 would allow projects to be consistent with policies CD-I-59 and CD-I-60. The CalGreen Code adds additional sustainability requirements to development projects and will further support project consistency with these energy related policies. Therefore, the project would not conflict with or obstruct the local plan for renewable energy or energy efficiency.

The project was reviewed for consistency with State of California energy plans. The ARB 2008 Scoping Plan required by AB 32 and the ARB 2017 Scoping Plan provide the State’s strategy for achieving legislated GHG reduction targets. Although the primary purpose of the Scoping Plans is to reduce GHG emissions, the strategies to achieve the GHG reduction targets rely on the use of increasing amounts of renewable fuels under the LCFS and RPS, and energy efficiency with updates to Title 24 and the CalGreen Code. The 2019 California Energy Efficiency Action Plan addresses issues pertaining to energy efficiency in California’s buildings, industrial, and agricultural sectors. Buildings constructed to implement the project will meet the latest efficiency standards. Vehicles and equipment will meet the latest fuel efficiency standards and use fuels subject to the LCFS (CEC 2019).

The project is consistent with applicable plans and policies and would not result in wasteful or inefficient use of nonrenewable energy sources; therefore, impacts would be less than significant.

### *Level of Significance Before Mitigation*

Less than significant impact.

### *Mitigation Measures*

No mitigation measures are required.

### *Level of Significance After Mitigation*

Less than significant impact.

# SECTION 8: REFERENCES

The following references were used in the preparation of this analysis and are referenced in the text and/or were used to provide the author with background information necessary for the preparation of thresholds and content.


Air Now. 2016. AQI Calculator: AQI to Concentration. Website: http://www.airnow.gov /index.cfm?action=resources.aqi_conc_calc. Accessed December 13, 2020.

Brown, Edmund G. Jr. 2015. Press Release: California Establishes Most Ambitious Greenhouse Gas Goal in North America. April 29. Website: https://www.gov.ca.gov/news.php?id=18938. No longer available online.

Brown, Edmund G. Jr. 2018. EO B-55-18. Website: https://www.gov.ca.gov/news.php?id=18938. No longer available online.

CalAdapt. 2019. Local Climate Snapshots. Website: http://v1.cal-adapt.org/tools/factsheet/. Accessed December 13, 2020.

CalEEMod. California Emissions Estimator Model. Version 2016.3.2 Website: http://caleemod.com/. Accessed December 14, 2020.

California Air Pollution Control Officers Association (CAPCOA). 2021. CAPCOA Greenhouse Gas Reduction Exchange. Website: http://www.ghgrx.org/. Accessed January 18, 2021.

California Air Resources Board (ARB). 1998. The Toxic Air Contaminant Identification Process: Toxic Air Contaminant Emissions from Diesel-fueled Engines. Website: http://www.arb.ca.gov /toxics/dieseltac/factsht1.pdf. Accessed December 14, 2020.

California Air Resources Board (ARB). 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles. Website: http://www.arb.ca.gov/diesel /documents/rrpfinal.pdf. Accessed December 14, 2020.

California Air Resources Board (ARB). 2005. California Environmental Protection Agency. Air Quality and Land Use Handbook: A Community Health Perspective. April 2005. Website: www.arb.ca.gov/ch/landuse.htm. Accessed December 14, 2020.

California Air Resources Board (ARB). 2007. Staff Report. California 1990 Greenhouse Gas Level and 2020 Emissions Limit. November 16, 2007. Website: www.arb.ca.gov/cc/inventory /pubs/reports/staff_report_1990_level.pdf. Accessed December 14, 2020.

California Air Resources Board (ARB). 2008. (includes edits made in 2009) Climate Change Scoping Plan, a framework for change. Website: http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf. Accessed December 14, 2020.

California Air Resources Board (ARB). 2009a. California Air Resources Board. Vinyl Chloride & Health. Website: https://ww2.arb.ca.gov/resources/vinyl-chloride-and-health. Accessed December 14, 2020.

California Air Resources Board (ARB). 2009b. The California Almanac of Emissions and Air Quality—2009 Edition. Chapter 4, Air Basin Trends and Forecasts—Criteria Pollutants. Website: https://www.cityofdavis.org/home/showdocument?id=4101. Accessed December 14, 2020.

California Air Resources Board (ARB). 2010a. 2020 Greenhouse Gas Emissions Projection and BAU Scenario Emissions Estimate. Website: https://ww3.arb.ca.gov/cc/inventory/archive/captrade_2010_projection.pdf. Accessed January 7, 2021.

California Air Resources Board (ARB). 2010b. Pavley 1 + Low Carbon Fuel Standard Postprocessor Version 1.0 User's Guide. Website: https://www.arb.ca.gov/cc/sb375/tools/pavleylcfs-userguide.pdf. Accessed December 14, 2020.

California Air Resources Board (ARB). 2013a. California Air Resources Board. Ambient Air Quality Standards. Updated May 4, 2016. Website: https://ww3.arb.ca.gov/research/aaqs/aaqs2.pdf. Accessed December 15, 2020.

California Air Resources Board (ARB). 2013b. The California Almanac of Air Quality and Emissions—2013 Edition. Website: http://www.arb.ca.gov/aqd/almanac/almanac13/almanac13.htm. Accessed December 14, 2020.

California Air Resources Board (ARB). 2013c. Area Designation Maps/State and National. 2012 State Area Designations. Page last reviewed October 18, 2017. Website: https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations. Accessed December 15, 2020.

California Air Resources Board (ARB). 2013d. Clean Car Standards—Pavley, Assembly Bill 1493. Website: http://www.arb.ca.gov/cc/ccms/ccms.htm. Accessed December 14, 2020.

California Air Resources Board (ARB). 2013e. Facts About the Clean Cars Program. Website: http://cdn.publicinterestnetwork.org/assets/t7oFiTG-2MdTF4T7J-lJ8g/Fact-Sheet---CA-Clean-Cars-Program.pdf. Accessed December 15, 2020.

California Air Resources Board (ARB). 2013f. Initial Statement of Reasons for Proposed Rulemaking, Proposed GHG Regulations for Medium and Heavy-Duty Engines and Vehicles. Website: https://www.arb.ca.gov/regact/2013/hdghg2013/hdghg2013isor.pdf. Accessed December 14, 2020.

California Air Resources Board (ARB). 2014b. First Update to the Climate Change Scoping Plan. Website: http://www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm. Accessed December 14, 2020.

California Air Resources Board (ARB). 2015a. On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation. Website: http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm. Accessed December 14, 2020.

California Air Resources Board (ARB). 2015b. Regulation for Reducing Emissions from Consumer Products. Website: https://ww2.arb.ca.gov/our-work/programs/consumer-products-program/current-regulations. Accessed December 16, 2020.

California Air Resources Board (ARB). 2015c. Short-Lived Climate Pollutant Reduction Strategy, Concept Paper. May. Website: https://ww2.arb.ca.gov/resources/documents/slcp-strategy-draft-may2015. Accessed December 16, 2020.

California Air Resources Board (ARB). 2015d. ARB Emissions Trading Program. Website: http://www.arb.ca.gov/cc/capandtrade/guidance/cap_trade_overview.pdf. Accessed December 14, 2020.

California Air Resources Board (ARB). 2015e. Low Carbon Fuel Standard Regulation. Website: http://www.arb.ca.gov/regact/2015/lcfs2015/lcfs2015.htm. Accessed December 14, 2020.

California Air Resources Board (ARB). 2015f. Regulation for Reducing Emissions from Consumer Products. Website: https://ww2.arb.ca.gov/our-work/programs/consumer-products-program/current-regulations. Accessed January 12, 2021.

California Air Resources Board (ARB). 2016a. Federal Standard Area Designations. Last Reviewed February 12, 2016. Website: http://www.arb.ca.gov/desig/feddesig.htm. Accessed December 14, 2020.

California Air Resources Board (ARB). 2017b. Short-Lived Climate Pollutant Reduction Strategy. March. Website: https://ww2.arb.ca.gov/sites/default/files/2020-07/final_SLCP_strategy.pdf. Accessed December 15, 2020.

California Air Resources Board (ARB). 2017c. The 2017 Climate Change Scoping Plan Update, the Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target. January 17, 2017. Website: https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf. Accessed December 14, 2020.

California Air Resources Board (ARB). 2017d. California's Advanced Clean Cars Midterm Review. Website: https://ww2.arb.ca.gov/resources/documents/2017-midterm-review-report. Accessed January 18, 2021.

California Air Resources Board (ARB). 2017e. Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets. Website: https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets. Accessed December 14, 2020.

California Air Resources Board (ARB). 2018a. California Greenhouse Inventory—Graphs. Website: https://www.arb.ca.gov/cc/inventory/data/graph/graph.htm. Accessed December 14, 2020.

California Air Resources Board (ARB). 2018b. Climate Pollutants Fall Below 1990 Levels for the First Time. Website: https://ww2.arb.ca.gov/news/climate-pollutants-fall-below-1990-levels-first-time. Accessed December 14, 2020.

California Air Resources Board (ARB). 2020a. iADAM: Air Quality Data Statistics. Website: https://www.arb.ca.gov/adam/. Accessed December 11, 2020.

California Air Resources Board (ARB). 2020b. Advanced Clean Trucks Fact Sheet. Website: https://ww2.arb.ca.gov/resources/fact-sheets/advanced-clean-trucks-fact-sheet. Accessed January 7, 2021.

California Air Resources Board (ARB). 2020c. 2000-2018 GHG Emissions by Category as Defined in the Scoping Plan. Website: https://ww2.arb.ca.gov/ghg-inventory-graphs. Accessed December 15, 2020.

California Air Resources Board (ARB). 2020d. California Cap-and-Trade Program, and Quebec Cap-and-Trade System November 2020 Joint Auction #25 Summary Results Report. Website: https://ww2.arb.ca.gov/sites/default/files/2020-11/nov_2020_summary_results_report.pdf. Accessed December 14, 2020.

California Building Standards Commission (CBSC) 2019. California Building Standards Code, California Code of Regulations Title 24, Part 11. Website: http://www.bsc.ca.gov/Home/CALGreen.aspx. Accessed December 14, 2020.

California Climate Change Center (CCCC). 2006. Our Changing Climate, Assessing the Risks to California: A Summary Report from the California Climate Change Center. July 2006. CEC-500-2006-077. Website: www.scc.ca.gov/webmaster/ftp/pdf/climate_change /assessing_risks.pdf. Accessed December 14, 2020.

California Department of Public Health (CDPH). 2018. Valley Fever Cases Continued to Increase in California in 2017. Last Updated August 18, 2018. Website: https://www.cdph.ca.gov /Programs/OPA/Pages/NR18-041.aspx. Accessed December 13, 2020.

California Department of Public Health (CDPH). 2020. Coccidioidomycosis in California Provisional Monthly Report January – June 2020. Website: https://www.cdph.ca.gov/Programs/CID /DCDC/CDPH%20Document%20Library/CocciinCAProvisionalMonthlyReport.pdf. Accessed December 13, 2020.

California Department of Resources Recycling and Recovery (CalRecycle). 2020. Countywide, Regionwide, and Statewide Jurisdiction Diversion/Disposal Progress Report06). Website https://www2.calrecycle.ca.gov/LGCentral/AnnualReporting/DiversionDisposal. Accessed December 14, 2020.

California Department of Resources Recycling and Recovery (CalRecycle). 2016b. California's 75 Percent Initiative: Defining the Future. Website: https://www.calrecycle.ca.gov/calendar /75percent. Accessed December 14, 2020.

California Department of Water Resources (CDWR). 2013. California Water Plan Update 2013, Chapter 3 Urban Water Use Efficiency. Website: https://water.ca.gov/Programs/California-Water-Plan/Previous-Updates. Accessed December 15, 2020.

California Department of Water Resources (CDWR). 2018. California Water Plan Update 2018. Website: https://water.ca.gov/Programs/California-Water-Plan/Update-2018. Accessed May 4, 2020.

California Energy Commission (CEC). 2014a. Integrated Energy Policy Report: 204 IEPR Update. Website: http://www.energy.ca.gov/2014publications/CEC-100-2014-001/CEC-100-2014-001-CMF-small.pdf. No longer available on CEC website.

California Energy Commission (CEC). 2014b. California Energy Commission News Release: New Title 24 Standards Will Cut Residential Energy Use by 25 Percent, Save Water, and Reduce Greenhouse Gas Emissions. No longer available on CEC website.

California Energy Commission (CEC). 2016. 2016 Building Energy Efficiency Standards Frequently Asked Questions. Website: http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2016_Building_Energy_Efficiency_Standards_FAQ.pdf. No longer available on CEC website.

California Energy Commission (CEC). 2018a. California Code of Regulations Title 20, Division 2, Article 4 Appliance Efficiency Regulations. Website: https://govt.westlaw.com/calregs/Browse/Home/California/CaliforniaCodeofRegulations?guid=I8F8F3BC0D44E11DEA95CA4428EC25FA0&originationContext=documenttoc&transitionType=Default&contextData=(sc.Default). Accessed December 15, 2020.

California Energy Commission (CEC). 2018b. 2019 Building Energy Efficiency Standards Frequently Asked Questions. Website: https://ww2.energy.ca.gov/title24/2019standards/documents/Title24_2019_Standards_detailed_faq.pdf. Accessed December 15, 2020.

California Energy Commission (CEC). 2019. Final Staff Report 2019 California Energy Action Plan. Website: https://ww2.energy.ca.gov/business_meetings/2019_packets/2019-12-11/Item_06_2019%20California%20Energy%20Efficiency%20Action%20Plan%20(19-IEPR-06).pdf. Accessed December 15, 2020.

California Environmental Protection Agency. 2002. Office of Environmental Health Hazard Assessment. Health Effects of Diesel Exhaust. Website: http://oehha.ca.gov/media/downloads/calenviroscreen/indicators/diesel4-02.pdf. Accessed January 18, 2021. (Note: information is used in Table 1.)

California Legislative Information (California Leginfo). 2015. Senate Bill 350 Clean Energy and Pollution Reduction Act of 2015. Website: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB350. Accessed January 18, 2021.

California Legislative Information (California Leginfo). 2018. Senate Bill 100 California Renewables Portfolio Standard Program. Website: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB100. Accessed January 18, 2021.

California Natural Resources Agency. 2009. 2009 California Climate Adaptation Strategy. Website: https://resources.ca.gov/CNRALegacyFiles/docs/climate/Statewide_Adaptation_Strategy.pdf. Accessed December 16, 2020.

California Office of Environmental Health Hazards Assessment 2015. Air Toxics Hot Spots Program Risk Assessment Guidelines. Guidance Manual for Preparation of Health Risk Assessments. February. Website: http://oehha.ca.gov/media/downloads/crnr /2015guidancemanual.pdf. Accessed December 16, 2020.

Center for Climate and Energy Solutions (C2ES). 2015a. Outcomes of the U.N. Climate Change Conference. Website: http://www.c2es.org/international/negotiations/cop21-paris/summary. Accessed December 16, 2020.

Center for Climate and Energy Solutions (C2ES). 2015b. Multi-State Climate Initiatives. Website: http://www.c2es.org/us-states-regions/regional-climate-initiatives. Accessed December 16, 2020.

Centers for Disease Control and Prevention (CDC). 2009. MMWR Weekly, Increase in Coccidiodomycosis – California, 2000-2007. Website: https://www.cdc.gov/mmwr/preview /mmwrhtml/mm5805a1.htm. Accessed December 13, 2020.

Centers for Disease Control and Prevention (CDC). 2010. Department of Health and Human Services, the National Institute for Occupational Safety and Health. Carbon Dioxide. Website: www.cdc.gov/niosh/npg/npgd0103.html. Accessed December 16, 2020.

Centers for Disease Control and Prevention (CDC). 2012. Construction—Website: www.cdc.gov/niosh/topics /indoorenv/constructionieq.html. Accessed December 16, 2020.

City of Lemoore. 2008. City of Lemoore 2030 General Plan and 2030 Draft Environmental Impact Report. Website: https://lemoore.com/communitydevelopment/general-plan/. Accessed December 11, 2020.

Climate Action Reserve (CAR). 2017. AB 398: California Extends Cap-and-Trade Program. Website: http://www.climateactionreserve.org/blog/2017/07/20/ab-398-california-extends-cap-and-trade-program/. Accessed December 16, 2020.

Energy and Environmental Economics. 2015. Pathways to Deep Decarbonization in the United States. Website: http://deepdecarbonization.org/wp-content/uploads/2015/11 /US_Deep_Decarbonization_Technical_Report_Exec_Summary.pdf. No longer available on website.

Governor's Office of Planning and Research. 2008. Technical Advisory. CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review. Website: http://opr.ca.gov/docs/june08-ceqa.pdf. Accessed December 16, 2020.

Intergovernmental Panel on Climate Change (IPCC). 2001. Climate Change 2001: The Scientific Basis. Website: https://www.ipcc.ch/site/assets/uploads/2018/07/WG1_TAR_FM.pdf. Accessed December 16, 2020.

Intergovernmental Panel on Climate Change (IPCC). 2007a. Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller [eds.]). Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, Website: https://www.ipcc.ch /report/ar4/wg1/. Accessed December 16, 2020.

Intergovernmental Panel on Climate Change (IPCC). 2007b. Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (Core Writing Team, Pachauri, R.K. and Reisinger, A. [eds.]). IPCC, Geneva, Switzerland. Website: https://www.ipcc.ch/report /ar4/syr/. Accessed December 16, 2020.

Intergovernmental Panel on Climate Change (IPCC). 2013. Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Website: https://www.ipcc.ch/report /ar5/wg1/. Accessed December 16, 2020.

Kings County Association of Governments (KCAG). 2018. 2018 Regional Transportation Plan and Sustainability Strategy. Website: https://www.kingscog.org/rtp_adopted. Accessed December 12, 2020.

Moser et al. 2009. Moser, Susie, Guido Franco, Sarah Pittiglio, Wendy Chou, Dan Cayan. 2009. The Future Is Now: An Update on Climate Change Science Impacts and Response Options for California. California Energy Commission, PIER Energy-Related Environmental Research Program. CEC-500-2008-071. Website: http://www.susannemoser.com/documents/CEC-500-2008-071_Moseretal_FutureisNow.pdf. Accessed January 12, 2021.

National Aeronautics and Space Administration (NASA). 2015. NASA—Global Climate Change, Vital Signs of a Planet. Website: http://climate.nasa.gov/causes/. Accessed January 12, 2021.

National Toxicology Program. 2016. Report on Carcinogens, Fourteenth Edition; U.S. Department of Health and Human Services, Public Health Service. Diesel Exhaust Particles. Website: https://ntp.niehs.nih.gov/ntp/roc/content/profiles/dieselexhaustparticulates.pdf. Accessed December 16, 2020. (Note: information is used in Table 1.)

Occupational Safety and Health Administration (OSHA). 2003. United States Department of Labor. Safety and Health Topics: Methane. Website: www.osha.gov/dts/chemicalsampling /data/CH_250700.html. Accessed December 16, 2020.

San Joaquin Valley Air Pollution Control District (SJVAPCD). 2007. 2007 Ozone Plan. Website: www.valleyair.org/Air_Quality_Plans/AQ_Final_Adopted_Ozone2007.htm. Accessed December 16, 2020.

San Joaquin Valley Air Pollution Control District (SJVAPCD). 2008. Climate Action Plan. Website: http://www.valleyair.org/programs/CCAP/CCAP_menu.htm. Accessed December 16, 2020.

San Joaquin Valley Air Pollution Control District (SJVAPCD). 2009a. Guidance for Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA. Website: www.valleyair.org /programs/CCAP/11-05-09/3_CCAP_FINAL_LU_Guidance_Nov_05_2009.pdf. Accessed December 16, 2020.

San Joaquin Valley Air Pollution Control District (SJVAPCD). 2009b. "Final Staff Report, Addressing Greenhouse Gas Emissions Impacts under the California Environmental Quality Act." Website: http://www.valleyair.org/programs/CCAP/11-05-09/1_CCAP_FINAL_CEQA_GHG_Draft_Staff_Report_Nov_05_2009.pdf. December 2009. Accessed December 16, 2020.

San Joaquin Valley Air Pollution Control District (SJVAPCD). 2012. 2012 $PM_{2.5}$ Plan. Website: http://www.valleyair.org/Air_Quality_Plans/PM25Plan2012/CompletedPlanbookmarked.pdf. Accessed December 16, 2020.

San Joaquin Valley Air Pollution Control District (SJVAPCD). 2015a. Guidance for Assessing and Mitigating Air Quality Impacts. Revised December 26, 2019. Website: https://www.valleyair.org/transportation/GAMAQI_12-26-19.pdf. Accessed December 16, 2020.

San Joaquin Valley Air Pollution Control District (SJVAPCD). 2015b. 2015 Plan for the 1997 $PM_{2.5}$ Standard. Website: http://www.valleyair.org/Air_Quality_Plans/docs/PM25-2015/2015-PM2.5-Plan_Bookmarked.pdf. Accessed December 16, 2020.

San Joaquin Valley Air Pollution Control District (SJVAPCD). 2016. 2016 Plan for the 2008 8-Hour Ozone Standard. Website: http://www.valleyair.org/Air_Quality_Plans/Ozone-Plan-2016/Adopted-Plan.pdf. December 16, 2020.

San Joaquin Valley Air Pollution Control District (SJVAPCD). 2017a. Ambient Air Quality Standards & Valley Attainment Status. Website: https://www.valleyair.org/aqinfo/attainment.htm. Accessed December 16, 2020.

San Joaquin Valley Air Pollution Control District (SJVAPCD). 2017b. Adopted PM Plans. http://www.valleyair.org/Air_Quality_Plans/PM_Plans.htm. Accessed December 16, 2020.

San Joaquin Valley Air Pollution Control District. 2018a. Ozone Plans. Website: http://valleyair.org /Air_Quality_Plans/Ozone_Plans.htm. Accessed December 16, 2020.

San Joaquin Valley Air Pollution Control District. 2018b. 2018 Plan for the 1997, 2006, and 2012 PM2.5 Standards. Website: http://www.valleyair.org/pmplans/. Accessed December 16, 2020.

U. S. Geological Survey. 2000. Operational Guidelines (version 1.0) for Geological Fieldwork in Areas Endemic for Coccidioidomycosis (Valley Fever). Website: http://citeseerx.ist.psu.edu /viewdoc/download?doi=10.1.1.486.1526&rep=rep1&type=pdf. Accessed December 16, 2020.

U.S. Environmental Protection Agency (EPA). 2003. Particle Pollution and your Health. EPA-452/F-03-001. Website: https://www.epa.gov/pm-pollution. Accessed December 16, 2020. (Note: information is used in Table 1.)

U.S. Environmental Protection Agency (EPA). 2009. Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act. Website: https://www.epa.gov/ghgemissions/endangerment-and-cause-or-contribute-findings-greenhouse-gases-under-clean-air-act. Accessed December 16, 2020.

U.S. Environmental Protection Agency (EPA). 2010a. Technology Transfer Network, Air Toxics Website. Page updated April 5, 2010. Health Effects Notebook for Hazardous Air Pollutants. Website: https://www.epa.gov/haps/health-effects-notebook-hazardous-air-pollutants. Accessed December 16, 2020. (Note: information is used in Table 1.)

U.S. Environmental Protection Agency (EPA). 2010b. Clean Air Act Permitting of Greenhouse Gases: Guidance and Technical Information, Fact Sheet. Website: https://www.epa.gov/sites /production/files/2015-12/documents/ghgpermittingtoolsfs.pdf. Accessed December 16, 2020.

U.S. Environmental Protection Agency (EPA). 2011a. Indoor Air Quality. Sources of Indoor Air Pollution—Organic Gases (Volatile Organic Compounds—VOCs). Website: https://www.epa.gov /indoor-air-quality-iaq/volatile-organic-compounds-impact-indoor-air-quality#Sources. Accessed December 16, 2020. (Note: data is used in Table 1.)

U.S. Environmental Protection Agency (EPA). 2011b. 2011 U.S. Greenhouse Gas Inventory Report. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2009. EPA 430-R-11-005. Website: https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2009. Accessed December 16, 2020.

U.S. Environmental Protection Agency (EPA). 2012. EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017-2025 Cars and Light Trucks. Website: https://nepis.epa.gov/Exe/ZyNET.exe/P100EZ7C.TXT?ZyActionD=ZyDocument&Client=EPA&Index=2011+Thru+2015&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5Czyfiles%5CIndex%20Data%5C11thru15%5CTxt%5C00000005%5CP100EZ7C.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=hpfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL. Accessed December 16, 2020.

U.S. Environmental Protection Agency (EPA). 2013. Federal Register. National Ambient Air Quality Standards for Particulate Matter. Website: http://www.gpo.gov/fdsys/pkg/FR-2013-01-15/pdf/2012-30946.pdf. Accessed December 16, 2020.

U.S. Environmental Protection Agency (EPA). 2014. Clean Air Act Requirements and History. Website: https://www.epa.gov/clean-air-act-overview/clean-air-act-requirements-and-history. Accessed December 16, 2020.

U.S. Environmental Protection Agency (EPA). 2016a. Green Book Nonattainment Areas for Criteria Pollutants as of April 22, 2016. Website: https://www.epa.gov/green-book. Accessed December 16, 2020.

U.S. Environmental Protection Agency (EPA). 2016b. Final Rule for San Joaquin Valley Determination of Attainment of the 1-Hour Ozone National Ambient Air Quality Standards. Website: https://www3.epa.gov/region9/air/actions/pdf/ca/sjv/epa-r09-oar-2016-0164-sjv-1hr-o2-determin-attain-factsheet-2016-06-30.pdf. Accessed December 16, 2020.

U.S. Environmental Protection Agency (EPA). 2017. Electric Utility Generating Units: Repealing the Clean Power Plan. Website: https://www.epa.gov/stationary-sources-air-pollution/electric-utility-generating-units-repealing-clean-power-plan. Accessed December 16, 2020.

U.S. Environmental Protection Agency (EPA). 2018a. Primary National Ambient Air Quality Standards (NAAQS) for Nitrogen Dioxide. Last revised April 18, 2018. Website: https://www.epa.gov/no2-pollution. Accessed December 16, 2020. (Note: information is used in Table 1.)

U.S. Environmental Protection Agency (EPA). 2018b. Fact Sheet, Final Rule: Implementation of the 2015 National Ambient Air Quality Standards for Ozone: Nonattainment Area Classification Approach. Website: https://www.epa.gov/sites/production/files/2018-03/documents/fs-2015-ozone-implementation-03012018.pdf. Accessed December 16, 2020.

U.S. Environmental Protection Agency (EPA). 2019. Nitrogen Dioxide Pollution. June 13, 2019. Website: https://www.epa.gov/no2-pollution. Accessed December 16, 2020. (Note: information is used in Table 1.)

U.S. Environmental Protection Agency (EPA). 2020. Ground Level Ozone Pollution. EPA-456/F-09-001. Website: https://www.epa.gov/ground-level-ozone-pollution. Accessed December 16, 2020.
(Note: information is used in Table 1.)

U.S. Geological Survey. 2011. Van Gosen, B.S., and Clinkenbeard, J.P. California Geological Survey Map Sheet 59. Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California. Open-File Report 2011-1188 Website: http://pubs.usgs.gov/of/2011/1188/. Accessed December 16, 2020.

Western Regional Climate Center. 2012. Recent Climate in the West. Website: http://www.wrcc.dri.edu/. Accessed December 16, 2020.

White House, The. Statement by President Trump on the Paris Climate Accord. Website: https://www.whitehouse.gov/the-press-office/2017/06/01/statement-president-trump-paris-climate-accord. Accessed December 16, 2020.

World Resources Institute (WRI). 2014. Annual Report for 2014. Website: http://www.wri.org /annualreport/2014/#around-the-world. Accessed December 16, 2020.

# Appendix A: Modeling Assumptions and Results

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# Appendix A: Modeling Assumptions and Emissions Summary

# Appendix A: Modeling Assumptions

## Lacey Ranch Area MP Modeling Assumptions

| | | | | | |
|---|---|---|---|---|---|
| | | | **Acres** | **Acres** | Avg Units/Acre |
| Single Family Lots | | 547 | 135.96 | | 4.02324213 |
| Multi Family Units | | 204 | 7.26 | 4.88 | 12.14 |
| Park (Acres) | | 7.9 | | | |
| Acres (Gross) Entire Site | | 156 | | | |
| Acres (Net) | | | | | |
| Density (units/acre) | | | | | |
| APN | 021-030-057 | | Assemi Group, Inc. | | |

| | Units | | Ground Up Construction Start | First Occupancy | Acres |
|---|---|---|---|---|---|
| Phase 1 Single Family | | 125 | 1/1/2022 | 2022 | 31.07 |
| Phase 1 Multi Family | | 145 | 1/1/22 | 2022 | 7.26 |
| | | **270** | | | **38.33** |
| Phase 2 Single Family | | 125 | 1/1/26 | 2026 | 31.07 |
| Phase 2 Multi Family | | 59 | 1/1/26 | 2026 | 4.88 |
| Park | | | | 2026 | 7.90 |
| | | **184** | | | **43.85** |
| Phase 3 Single Family | | **125** | 1/1/30 | 2030 | **31.07** |
| Phase 4 Single Family | | **172** | 1/1/34 | 2034 | **42.75** |
| **Grand Total** | | **751** | | | **163.90** |
| Buildout Complete 16 Years | | | 1/1/2038 | | |
| | | | 4.376 | 34.1875 | 3.65630713 |
| | | | 34.1875 | | |

| | | |
|---|---|---|
| PG&E Emission Factor for 2020 | **MTCO2/MWh** | |
| 2020 | | 290 |

PG&E Greenhouse Gas Emission Factors: Guidance for PG&E Customers November 2015

| | | **Miles** | |
|---|---|---|---|
| Dry Cleaner | 111 E. Hanford Armona Rd | 0.52 | South |
| Gas Station | 1110 N. Lemoore Ave. | 0.49 | South |
| Auto Body Shop | 113 E. Street | 1.2 | South |
| Distance to Downtown Lemoore | | 1.6 | |

## Lacey Ranch Construction Assumptions

### Default Schedule Phase 1

| PhaseNumber | PhaseName | PhaseType | PhaseStartDate | PhaseEndDate | NumDaysWeek | NumDays |
|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 2022/01/01 | 2022/02/11 | 5 | 30 |
| 2 | Grading | Grading | 2022/02/12 | 2022/05/27 | 5 | 75 |
| 3 | Building Construction | Building Construction | 2022/05/28 | 2025/03/28 | 5 | 740 |
| 4 | Paving | Paving | 2025/03/29 | 2025/06/13 | 5 | 55 |
| 5 | Architectural Coating | Architectural Coating | 2025/06/14 | 2025/08/29 | 5 | 55 |

## Default Construction Equipment List

| Phase Name | Offroad Equipment Type | No. of Equip. | Usage Hours/day | Work Days Used | Hours/Phase | Horsepower | Load Factor | Fuel Use (gal) |
|---|---|---|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8 | 30 | 720 | 247 | 0.4 | 8,892 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8 | 30 | 960 | 97 | 0.37 | 4,656 |
| Grading | Excavators | 2 | 8 | 75 | 1200 | 158 | 0.38 | 9,480 |
| Grading | Graders | 1 | 8 | 75 | 600 | 187 | 0.41 | 5,610 |
| Grading | Rubber Tired Dozers | 1 | 8 | 75 | 600 | 247 | 0.4 | 7,410 |
| Grading | Scrapers | 2 | 8 | 75 | 1200 | 367 | 0.48 | 22,020 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8 | 75 | 1200 | 97 | 0.37 | 5,820 |
| Building Construction | Cranes | 1 | 7 | 740 | 5180 | 231 | 0.29 | 59,829 |
| Building Construction | Forklifts | 3 | 8 | 740 | 17760 | 89 | 0.2 | 79,032 |
| Building Construction | Generator Sets | 1 | 8 | 740 | 5920 | 84 | 0.74 | 24,864 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7 | 740 | 15540 | 97 | 0.37 | 75,369 |
| Building Construction | Welders | 1 | 8 | 740 | 5920 | 46 | 0.45 | 13,616 |
| Paving | Pavers | 2 | 8 | 55 | 880 | 130 | 0.42 | 5,720 |
| Paving | Paving Equipment | 2 | 8 | 55 | 880 | 132 | 0.36 | 5,808 |
| Paving | Rollers | 2 | 8 | 55 | 880 | 80 | 0.38 | 3,520 |
| Architectural Coating | Air Compressors | 1 | 6 | 55 | 330 | 78 | 0.48 | 1,287 |
| | | | | | | | | **332,933** |
| Fuel Use Factor (SCAQMD | 0.05 gal/bhp-hr | | | | **59770** | | | |

### Default Schedule Phase 2

| PhaseNumber | PhaseName | PhaseType | PhaseStartDate | PhaseEndDate | NumDaysWeek | NumDays |
|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 2026/01/01 | 2026/02/11 | 5 | 30 |
| 2 | Grading | Grading | 2026/02/12 | 2026/05/27 | 5 | 75 |
| 3 | Building Construction | Building Construction | 2026/05/28 | 2029/03/28 | 5 | 740 |
| 4 | Paving | Paving | 2029/03/29 | 2029/06/13 | 5 | 55 |
| 5 | Architectural Coating | Architectural Coating | 2029/06/14 | 2029/08/29 | 5 | 55 |

## Default Construction Equipment List

| Phase Name | Offroad Equipment Type | No. of Equip. | Usage Hours/day | Work Days Used | Hours/Phase | Horsepower | Load Factor | Fuel Use (gal) |
|---|---|---|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8 | 30 | 720 | 247 | 0.4 | 8,892 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8 | 30 | 960 | 97 | 0.37 | 4,656 |
| Grading | Excavators | 2 | 8 | 75 | 1200 | 158 | 0.38 | 9,480 |
| Grading | Graders | 1 | 8 | 75 | 600 | 187 | 0.41 | 5,610 |
| Grading | Rubber Tired Dozers | 1 | 8 | 75 | 600 | 247 | 0.4 | 7,410 |
| Grading | Scrapers | 2 | 8 | 75 | 1200 | 367 | 0.48 | 22,020 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8 | 75 | 1200 | 97 | 0.37 | 5,820 |
| Building Construction | Cranes | 1 | 7 | 740 | 5180 | 231 | 0.29 | 59,829 |
| Building Construction | Forklifts | 3 | 8 | 740 | 17760 | 89 | 0.2 | 79,032 |
| Building Construction | Generator Sets | 1 | 8 | 740 | 5920 | 84 | 0.74 | 24,864 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7 | 740 | 15540 | 97 | 0.37 | 75,369 |
| Building Construction | Welders | 1 | 8 | 740 | 5920 | 46 | 0.45 | 13,616 |
| Paving | Pavers | 2 | 8 | 55 | 880 | 130 | 0.42 | 5,720 |
| Paving | Paving Equipment | 2 | 8 | 55 | 880 | 132 | 0.36 | 5,808 |
| Paving | Rollers | 2 | 8 | 55 | 880 | 80 | 0.38 | 3,520 |
| Architectural Coating | Air Compressors | 1 | 6 | 55 | 330 | 78 | 0.48 | 1,287 |
| | | | | | 59770 | | | **332,933** |

### Default Schedule Phase 3

| PhaseNumber | PhaseName | PhaseType | PhaseStartDate | PhaseEndDate | NumDaysWeek | NumDays |
|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 2030/01/01 | 2030/01/28 | 5 | 20 |
| 2 | Grading | Grading | 2030/01/29 | 2030/04/01 | 5 | 45 |
| 3 | Building Construction | Building Construction | 2030/04/02 | 2032/03/01 | 5 | 500 |
| 4 | Paving | Paving | 2032/03/02 | 2032/04/19 | 5 | 35 |
| 5 | Architectural Coating | Architectural Coating | 2032/04/20 | 2032/06/07 | 5 | 35 |

## Default Construction Equipment List

| Phase Name | Offroad Equipment Type | No. of Equip. | Usage Hours/day | Work Days Used | Hours/Phase | Horsepower | Load Factor | Fuel Use (gal) |
|---|---|---|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8 | 20 | 480 | 247 | 0.4 | 5,928 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8 | 20 | 640 | 97 | 0.37 | 3,104 |
| Grading | Excavators | 2 | 8 | 45 | 720 | 158 | 0.38 | 5,688 |
| Grading | Graders | 1 | 8 | 45 | 360 | 187 | 0.41 | 3,366 |
| Grading | Rubber Tired Dozers | 1 | 8 | 45 | 360 | 247 | 0.4 | 4,446 |
| Grading | Scrapers | 2 | 8 | 45 | 720 | 367 | 0.48 | 13,212 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8 | 45 | 720 | 97 | 0.37 | 3,492 |
| Building Construction | Cranes | 1 | 7 | 500 | 3500 | 231 | 0.29 | 40,425 |
| Building Construction | Forklifts | 3 | 8 | 500 | 12000 | 89 | 0.2 | 53,400 |
| Building Construction | Generator Sets | 1 | 8 | 500 | 4000 | 84 | 0.74 | 16,800 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7 | 500 | 10500 | 97 | 0.37 | 50,925 |
| Building Construction | Welders | 1 | 8 | 500 | 4000 | 46 | 0.45 | 9,200 |
| Paving | Pavers | 2 | 8 | 35 | 560 | 130 | 0.42 | 3,640 |
| Paving | Paving Equipment | 2 | 8 | 35 | 560 | 132 | 0.36 | 3,696 |
| Paving | Rollers | 2 | 8 | 35 | 560 | 80 | 0.38 | 2,240 |
| Architectural Coating | Air Compressors | 1 | 6 | 35 | 210 | 78 | 0.48 | 819 |
| | | | | | 39890 | | | 220,381 |

### Default Schedule Phase 4

| PhaseNumber | PhaseName | PhaseType | PhaseStartDate | PhaseEndDate | NumDaysWeek | NumDays |
|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 2034/01/01 | 2034/02/10 | 5 | 30 |
| 2 | Grading | Grading | 2034/02/11 | 2034/05/26 | 5 | 75 |
| 3 | Building Construction | Building Construction | 2034/05/27 | 2037/03/27 | 5 | 740 |
| 4 | Paving | Paving | 2037/03/28 | 2037/06/12 | 5 | 55 |
| 5 | Architectural Coating | Architectural Coating | 2037/06/13 | 2037/08/28 | 5 | 55 |

## Default Construction Equipment List

| Phase Name | Offroad Equipment Type | No. of Equip. | Usage Hours/day | Work Days Used | Hours/Phase | Horsepower | Load Factor | Fuel Use (gal) |
|---|---|---|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8 | 30 | 720 | 247 | 0.4 | 8,892 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8 | 30 | 960 | 97 | 0.37 | 4,656 |
| Grading | Excavators | 2 | 8 | 75 | 1200 | 158 | 0.38 | 9,480 |
| Grading | Graders | 1 | 8 | 75 | 600 | 187 | 0.41 | 5,610 |
| Grading | Rubber Tired Dozers | 1 | 8 | 75 | 600 | 247 | 0.4 | 7,410 |
| Grading | Scrapers | 2 | 8 | 75 | 1200 | 367 | 0.48 | 22,020 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8 | 75 | 1200 | 97 | 0.37 | 5,820 |
| Building Construction | Cranes | 1 | 7 | 740 | 5180 | 231 | 0.29 | 59,829 |
| Building Construction | Forklifts | 3 | 8 | 740 | 17760 | 89 | 0.2 | 79,032 |
| Building Construction | Generator Sets | 1 | 8 | 740 | 5920 | 84 | 0.74 | 24,864 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7 | 740 | 15540 | 97 | 0.37 | 75,369 |
| Building Construction | Welders | 1 | 8 | 740 | 5920 | 46 | 0.45 | 13,616 |
| Paving | Pavers | 2 | 8 | 55 | 880 | 130 | 0.42 | 5,720 |
| Paving | Paving Equipment | 2 | 8 | 55 | 880 | 132 | 0.36 | 5,808 |
| Paving | Rollers | 2 | 8 | 55 | 880 | 80 | 0.38 | 3,520 |
| Architectural Coating | Air Compressors | 1 | 6 | 55 | 330 | 78 | 0.48 | 1,287 |
| | | | | | 59770 | | | 332,933 |

| Total Fuel Consumption | Hours of Use | Gallons Diesel |
|---|---|---|
| Phase 1 | 59770 | 332,933 |
| Phase 2 | 59770 | 332,933 |
| Phase 3 | 39890 | 220,381 |
| Phase 4 | 59770 | 332,933 |
| **Total** | | **1,219,180** |

Source: CalEEMod Results

# Appendix A: Energy Analysis Assumptions and Calculations

# Energy Analysis

**Construction**

| **Total Fuel Consumption** | **Hours of Use** | **Gallons Diesel** |
|---|---|---|
| Phase 1 | 59,770 | 332,933 |
| Phase 2 | 59,770 | 332,933 |
| Phase 3 | 39,890 | 220,381 |
| Phase 4 | 59,770 | 332,933 |
| Total | **219,200** | **1,219,180** |

Source: CalEEMod Results

| **Phase 1** | **Days/Phase** | **Worker Trips/day** | **Worker Trips/Phase** | **Vendor Trips/day** | **Vendor Trips/Phase** | **Hauling Trips/day** | **Hauling Trips/Phase** | **Worker Trip Length** | **Vendor Trip Length** | **Hauling Trip Length** |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 30 | 18 | 540 | 0 | 0 | 0 | 0 | 10.8 | 7.3 | 20 |
| Grading | 75 | 20 | 1500 | 0 | 0 | 0 | 0 | | | |
| Building Construction | 740 | 149 | 110260 | 29 | 493 | 0 | 0 | | | |
| Paving | 55 | 15 | 825 | 0 | 0 | 0 | 0 | | | |
| Architecture | 55 | 30 | 1650 | 0 | 0 | 0 | 0 | | | |
| **Totals** | | **232** | **114775** | **29** | **493** | **0** | **0** | | | |
| | | | | | | | | **Total** | | |
| VMT/Year | | | 1,239,570 | | 5,324 | | 0 | **1,244,894** | | |

| **Phase 2** | **Days/Phase** | **Worker Trips/day** | **Worker Trips/Phase** | **Vendor Trips/day** | **Vendor Trips/Phase** | **Hauling Trips/day** | **Hauling Trips/Phase** | **Worker Trip Length** | **Vendor Trip Length** | **Hauling Trip Length** |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 30 | 18 | 540 | 0 | 0 | 0 | 0 | 10.8 | 7.3 | 20 |
| Grading | 75 | 20 | 1500 | 0 | 0 | 0 | 0 | | | |
| Building Construction | 740 | 232 | 171680 | 76 | 1292 | 0 | 0 | | | |
| Paving | 55 | 15 | 825 | 0 | 0 | 0 | 0 | | | |
| Architecture | 55 | 46 | 2530 | 0 | 0 | 0 | 0 | | | |
| **Totals** | | **331** | **177075** | **76** | **1292** | **0** | **0** | | | |
| | | | | | | | | **Total** | | |
| **VMT/Year** | | | 1,912,410 | | 9,432 | | 0 | **1,921,842** | | |

| Phase 3 | Days/Phase | Worker Trips/day | Worker Trips/Phase | Vendor Trips/day | Vendor Trips/Phase | Hauling Trips/day | Hauling Trips/Phase | Worker Trip Length | Vendor Trip Length | Hauling Trip Length |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 20 | 18 | 360 | 0 | 0 | 0 | 0 | 10.8 | 7.3 | 20 |
| Grading | 45 | 20 | 900 | 0 | 0 | 0 | 0 | | | |
| Building Construction | 500 | 45 | 22500 | 13 | 221 | 0 | 0 | | | |
| Paving | 35 | 15 | 525 | 0 | 0 | 0 | 0 | | | |
| Architecture | 35 | 9 | 315 | 0 | 0 | 0 | 0 | | | |
| **Totals** | | **107** | **24600** | **13** | **221** | **0** | **0** | | | |
| | | | | | | | | **Total** | | |
| VMT/Year | | | 265,680 | | 2,387 | | 0 | **268,067** | | |

| Phase 4 | Days/Phase | Worker Trips/day | Worker Trips/Phase | Vendor Trips/day | Vendor Trips/Phase | Hauling Trips/day | Hauling Trips/Phase | Worker Trip Length | Vendor Trip Length | Hauling Trip Length |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 30 | 18 | 540 | 0 | 0 | 0 | 0 | 10.8 | 7.3 | 20 |
| Grading | 75 | 20 | 1500 | 0 | 0 | 0 | 0 | | | |
| Building Construction | 740 | 62 | 45880 | 18 | 306 | 0 | 0 | | | |
| Paving | 55 | 15 | 825 | 0 | 0 | 0 | 0 | | | |
| Architecture | 55 | 12 | 660 | 0 | 0 | 0 | 0 | | | |
| **Totals** | | **127** | **49405** | **18** | **306** | **0** | **0** | | | |
| | | | | | | | | **Total** | | |
| **VMT/Year** | | | **533,574** | | **3,305** | | 0 | **536,879** | | |

| **Total VMT All Phases** | **Worker** | **Vendor** | **Total** |
|---|---|---|---|
| Phase 1 | 1,239,570 | 5,324 | 1,244,894 |
| Phase 2 | 1,912,410 | 9,432 | 1,921,842 |
| Phase 3 | 265,680 | 2,387 | 268,067 |
| Phase 4 | 533,574 | 3,305 | 536,879 |
| **Total** | **3,951,234** | **20,448** | **3,971,682** |

| | | |
|---|---|---|
| Vender Truck MPG | 9.75 | |
| Vender Fuel Use (gal) | 2,097 | All Fuels |
| Worker Vehicles MPG | 40.0 | |
| Worker Fuel Use (gal) | 98,904.5 | All Fuels |
| **Total - All Phases** | **101,001.7** | |

| **Operational VMT** | **VMT/Year** | |
|---|---|---|
| Buildout 2038 | 17,822,665 | |
| Residential MPG | 25.79 | |
| **Fuel Use** | **691,069** | All Fuels |

**Average fuel economy from EMFAC 2017**

**Electricity Usage**

| | **kWh/yr** | **KWh/DU** | **Dus** |
|---|---|---|---|
| Apartments | 944,298 | 4,678 | 204 |
| Single Family | 4,753,990 | 8,761 | 547 |
| **Total** | **5,698,288** | | |

Source: CalEEMod Results

**Water Usage**

| **Indoor Water Usage** | **Mgal/yr** | **Intensity Factor Supply (kWhr/Mgal)** | **Intensity Factor Treat (kWhr/Mgal)** | **Intensity Factor Distribute (kWhr/Mgal)** | **Intensity Factor WW Treatment (kWhr/Mgal)** | **Total Intensity (kWhr/Mgal)** | **Electricity Usage kWh/Yr.** |
|---|---|---|---|---|---|---|---|
| Apartments | 10.6331 | 2,117 | 111 | 1,272 | 1,911 | 5,411 | 57,536 |
| Park | 0 | 2,117 | 111 | 1,272 | 1,911 | 5,411 | 0 |
| Single Family | 28.5114 | 2,117 | 111 | 1,272 | 1,911 | 5,411 | 154,275 |
| | **39.1445** | | | | | | **211,811** |
| **Outdoor Water Usage** | | | | | | | |
| Apartments | 6.7035 | 2,117 | 111 | 1,272 | | 3,500 | 23,462 |
| Park | 7.53016 | 2,117 | 111 | 1,272 | | 3,500 | 26,356 |
| Single family | 17.9746 | 2,117 | 111 | 1,272 | | 3,500 | 62,911 |
| | **32.20826** | | | | | | **112,729** |
| Total Water Use Indoor and Outdoor | | 71.35276 | | | | | **324,540** |

| **Natural Gas** | **kBTU/yr** | **Intensity Factor** | **DUs** |
|---|---|---|---|
| Apartments | 2,735,130 | 14136.46 | 209 |
| Park | 0 | | |
| Single family | 13,442,900 | 26145.24 | 547 |
| **Total** | **16,178,030** | | |

**EMFAC2017 (v1.0.2) Emissions Inventory**
Region Type: County
Region: KINGS
Calendar Year: 2038
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption. Note 'day' in the unit is operation day.

| Region | alendar Ye | hicle Categ | Model Year | Speed | Fuel | Population | VMT | Trips | Fuel Consumption |
|---|---|---|---|---|---|---|---|---|---|
| KINGS | 2038 | All Other B | Aggregated | Aggregated | DSL | 35 | 1,887 | 291 | 0.16 |
| KINGS | 2038 | LDA | Aggregated | Aggregated | GAS | 102,683 | 3,575,914 | 481,324 | 85.95 |
| KINGS | 2038 | LDA | Aggregated | Aggregated | DSL | 1,245 | 44,132 | 5,878 | 0.65 |
| KINGS | 2038 | LDA | Aggregated | Aggregated | ELEC | 6,205 | 218,245 | 29,618 | 0.00 |
| KINGS | 2038 | LDT1 | Aggregated | Aggregated | GAS | 11,446 | 357,846 | 52,513 | 10.11 |
| KINGS | 2038 | LDT1 | Aggregated | Aggregated | DSL | 2 | 50 | 7 | 0.00 |
| KINGS | 2038 | LDT1 | Aggregated | Aggregated | ELEC | 384 | 13,372 | 1,827 | 0.00 |
| KINGS | 2038 | LDT2 | Aggregated | Aggregated | GAS | 34,960 | 1,106,585 | 161,286 | 31.11 |
| KINGS | 2038 | LDT2 | Aggregated | Aggregated | DSL | 344 | 11,189 | 1,611 | 0.22 |
| KINGS | 2038 | LDT2 | Aggregated | Aggregated | ELEC | 1,417 | 34,074 | 6,735 | 0.00 |
| KINGS | 2038 | LHD1 | Aggregated | Aggregated | GAS | 2,045 | 65,826 | 30,471 | 6.51 |
| KINGS | 2038 | LHD1 | Aggregated | Aggregated | DSL | 2,259 | 68,800 | 28,416 | 3.15 |
| KINGS | 2038 | LHD2 | Aggregated | Aggregated | GAS | 301 | 9,593 | 4,482 | 1.09 |
| KINGS | 2038 | LHD2 | Aggregated | Aggregated | DSL | 855 | 25,943 | 10,753 | 1.33 |
| KINGS | 2038 | MCY | Aggregated | Aggregated | GAS | 4,551 | 33,699 | 9,103 | 0.89 |
| KINGS | 2038 | MDV | Aggregated | Aggregated | GAS | 24,080 | 722,893 | 108,812 | 24.84 |
| KINGS | 2038 | MDV | Aggregated | Aggregated | DSL | 815 | 25,733 | 3,766 | 0.67 |
| KINGS | 2038 | MDV | Aggregated | Aggregated | ELEC | 1,021 | 24,698 | 4,865 | 0.00 |
| KINGS | 2038 | MH | Aggregated | Aggregated | GAS | 323 | 3,009 | 32 | 0.51 |
| KINGS | 2038 | MH | Aggregated | Aggregated | DSL | 179 | 1,410 | 18 | 0.12 |
| KINGS | 2038 | Motor Coa | Aggregated | Aggregated | DSL | 10 | 1,274 | 153 | 0.16 |
| KINGS | 2038 | OBUS | Aggregated | Aggregated | GAS | 64 | 3,017 | 1,283 | 0.52 |
| KINGS | 2038 | PTO | Aggregated | Aggregated | DSL | 0 | 1,486 | 0 | 0.25 |
| KINGS | 2038 | SBUS | Aggregated | Aggregated | GAS | 35 | 1,832 | 141 | 0.16 |
| KINGS | 2038 | SBUS | Aggregated | Aggregated | DSL | 141 | 4,469 | 1,624 | 0.44 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| KINGS | 2038 | T6 Ag | Aggregated | Aggregated | DSL | 42 | 66 | 183 | 0.01 |
| KINGS | 2038 | T6 CAIRP h | Aggregated | Aggregated | DSL | 27 | 4,607 | 400 | 0.31 |
| KINGS | 2038 | T6 CAIRP sr | Aggregated | Aggregated | DSL | 21 | 906 | 305 | 0.07 |
| KINGS | 2038 | T6 instate c | Aggregated | Aggregated | DSL | 279 | 18,112 | 1,260 | 1.90 |
| KINGS | 2038 | T6 instate c | Aggregated | Aggregated | DSL | 411 | 20,461 | 1,858 | 1.96 |
| KINGS | 2038 | T6 instate h | Aggregated | Aggregated | DSL | 134 | 9,859 | 1,544 | 0.88 |
| KINGS | 2038 | T6 instate s | Aggregated | Aggregated | DSL | 244 | 9,890 | 2,813 | 0.84 |
| KINGS | 2038 | T6 OOS hea | Aggregated | Aggregated | DSL | 16 | 2,731 | 236 | 0.18 |
| KINGS | 2038 | T6 OOS sm | Aggregated | Aggregated | DSL | 9 | 398 | 135 | 0.03 |
| KINGS | 2038 | T6 Public | Aggregated | Aggregated | DSL | 55 | 844 | 166 | 0.09 |
| KINGS | 2038 | T6 utility | Aggregated | Aggregated | DSL | 16 | 272 | 188 | 0.02 |
| KINGS | 2038 | T6TS | Aggregated | Aggregated | GAS | 241 | 14,463 | 4,826 | 2.43 |
| KINGS | 2038 | T7 Ag | Aggregated | Aggregated | DSL | 59 | 129 | 262 | 0.03 |
| KINGS | 2038 | T7 CAIRP | Aggregated | Aggregated | DSL | 1,032 | 219,216 | 15,063 | 22.60 |
| KINGS | 2038 | T7 CAIRP cc | Aggregated | Aggregated | DSL | 72 | 13,010 | 326 | 1.67 |
| KINGS | 2038 | T7 NNOOS | Aggregated | Aggregated | DSL | 1,587 | 267,250 | 23,164 | 28.82 |
| KINGS | 2038 | T7 NOOS | Aggregated | Aggregated | DSL | 410 | 86,136 | 5,990 | 9.10 |
| KINGS | 2038 | T7 other pc | Aggregated | Aggregated | DSL | 26 | 4,387 | 200 | 0.51 |
| KINGS | 2038 | T7 POAK | Aggregated | Aggregated | DSL | 150 | 25,359 | 1,142 | 3.01 |
| KINGS | 2038 | T7 POLA | Aggregated | Aggregated | DSL | 148 | 31,210 | 1,123 | 3.88 |
| KINGS | 2038 | T7 Public | Aggregated | Aggregated | DSL | 139 | 2,824 | 423 | 0.39 |
| KINGS | 2038 | T7 Single | Aggregated | Aggregated | DSL | 101 | 7,484 | 1,165 | 0.99 |
| KINGS | 2038 | T7 single cc | Aggregated | Aggregated | DSL | 426 | 32,276 | 1,928 | 4.69 |
| KINGS | 2038 | T7 SWCV | Aggregated | Aggregated | DSL | 41 | 1,684 | 161 | 0.51 |
| KINGS | 2038 | T7 SWCV | Aggregated | Aggregated | NG | 7 | 273 | 26 | 0.09 |
| KINGS | 2038 | T7 tractor | Aggregated | Aggregated | DSL | 2,649 | 328,730 | 33,641 | 32.17 |
| KINGS | 2038 | T7 tractor c | Aggregated | Aggregated | DSL | 355 | 26,625 | 1,606 | 3.79 |
| KINGS | 2038 | T7 utility | Aggregated | Aggregated | DSL | 15 | 305 | 173 | 0.04 |
| KINGS | 2038 | T7IS | Aggregated | Aggregated | GAS | 1 | 139 | 21 | 0.03 |
| KINGS | 2038 | UBUS | Aggregated | Aggregated | GAS | 7 | 580 | 26 | 0.08 |
| KINGS | 2038 | UBUS | Aggregated | Aggregated | DSL | 6 | 611 | 24 | 0.06 |
| KINGS | 2038 | UBUS | Aggregated | Aggregated | NG | 24 | 2,461 | 98 | 0.43 |
| | | | | | | | 7,490,275 | | 290 |
| | | | | | | | | | 290,482 |
| Overall Fuel Economy All Fuels | | | | | | MPG | 25.79 | | |

**Truck Only Fleet Average Fuel Economy**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| KINGS | 2038 | LHD1 | Aggregated | Aggregated | GAS | 2,045 | 65,826 | 30,471 | 6.51 |
| KINGS | 2038 | LHD1 | Aggregated | Aggregated | DSL | 2,259 | 68,800 | 28,416 | 3.15 |
| KINGS | 2038 | LHD2 | Aggregated | Aggregated | GAS | 301 | 9,593 | 4,482 | 1.09 |
| KINGS | 2038 | LHD2 | Aggregated | Aggregated | DSL | 855 | 25,943 | 10,753 | 1.33 |
| KINGS | 2038 | T6 Ag | Aggregated | Aggregated | DSL | 42 | 66 | 183 | 0.01 |
| KINGS | 2038 | T6 CAIRP h | Aggregated | Aggregated | DSL | 27 | 4,607 | 400 | 0.31 |
| KINGS | 2038 | T6 CAIRP sr | Aggregated | Aggregated | DSL | 21 | 906 | 305 | 0.07 |
| KINGS | 2038 | T6 instate c | Aggregated | Aggregated | DSL | 279 | 18,112 | 1,260 | 1.90 |
| KINGS | 2038 | T6 instate c | Aggregated | Aggregated | DSL | 411 | 20,461 | 1,858 | 1.96 |
| KINGS | 2038 | T6 instate h | Aggregated | Aggregated | DSL | 134 | 9,859 | 1,544 | 0.88 |
| KINGS | 2038 | T6 instate s | Aggregated | Aggregated | DSL | 244 | 9,890 | 2,813 | 0.84 |
| KINGS | 2038 | T6 OOS hea | Aggregated | Aggregated | DSL | 16 | 2,731 | 236 | 0.18 |
| KINGS | 2038 | T6 OOS sm | Aggregated | Aggregated | DSL | 9 | 398 | 135 | 0.03 |
| KINGS | 2038 | T6 Public | Aggregated | Aggregated | DSL | 55 | 844 | 166 | 0.09 |
| KINGS | 2038 | T6 utility | Aggregated | Aggregated | DSL | 16 | 272 | 188 | 0.02 |
| KINGS | 2038 | T6TS | Aggregated | Aggregated | GAS | 241 | 14,463 | 4,826 | 2.43 |
| KINGS | 2038 | T7 Ag | Aggregated | Aggregated | DSL | 59 | 129 | 262 | 0.03 |
| KINGS | 2038 | T7 CAIRP | Aggregated | Aggregated | DSL | 1,032 | 219,216 | 15,063 | 22.60 |
| KINGS | 2038 | T7 CAIRP cc | Aggregated | Aggregated | DSL | 72 | 13,010 | 326 | 1.67 |
| KINGS | 2038 | T7 NNOOS | Aggregated | Aggregated | DSL | 1,587 | 267,250 | 23,164 | 28.82 |
| KINGS | 2038 | T7 NOOS | Aggregated | Aggregated | DSL | 410 | 86,136 | 5,990 | 9.10 |
| KINGS | 2038 | T7 other pc | Aggregated | Aggregated | DSL | 26 | 4,387 | 200 | 0.51 |
| KINGS | 2038 | T7 POAK | Aggregated | Aggregated | DSL | 150 | 25,359 | 1,142 | 3.01 |
| KINGS | 2038 | T7 POLA | Aggregated | Aggregated | DSL | 148 | 31,210 | 1,123 | 3.88 |
| KINGS | 2038 | T7 Public | Aggregated | Aggregated | DSL | 139 | 2,824 | 423 | 0.39 |
| KINGS | 2038 | T7 Single | Aggregated | Aggregated | DSL | 101 | 7,484 | 1,165 | 0.99 |
| KINGS | 2038 | T7 single cc | Aggregated | Aggregated | DSL | 426 | 32,276 | 1,928 | 4.69 |
| KINGS | 2038 | T7 SWCV | Aggregated | Aggregated | DSL | 41 | 1,684 | 161 | 0.51 |
| KINGS | 2038 | T7 SWCV | Aggregated | Aggregated | NG | 7 | 273 | 26 | 0.09 |
| KINGS | 2038 | T7 tractor | Aggregated | Aggregated | DSL | 2,649 | 328,730 | 33,641 | 32.17 |
| KINGS | 2038 | T7 tractor c | Aggregated | Aggregated | DSL | 355 | 26,625 | 1,606 | 3.79 |
| KINGS | 2038 | T7 utility | Aggregated | Aggregated | DSL | 15 | 305 | 173 | 0.04 |
| KINGS | 2038 | T7IS | Aggregated | Aggregated | GAS | 1 | 139 | 21 | 0.03 |
| KINGS | 2038 | UBUS | Aggregated | Aggregated | GAS | 7 | 580 | 26 | 0.08 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| KINGS | 2038 | UBUS | Aggregated | Aggregated | DSL | | 6 | 611 | 24 | 0.06 |
| KINGS | 2038 | UBUS | Aggregated | Aggregated | NG | | 24 | 2,461 | 98 | 0.43 |
| | | | | | | | | 1,303,462 | | 133.70 |
| Truck Fleet Fuel Efficiency | | | | | | MPG | | 9.75 | | 133,705 |

**Passenger Car and Light Truck Fleet Efficiency**

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| KINGS | 2038 | LDA | Aggregated | Aggregated | GAS | | 102,683 | 3,575,914 | 481,324 | 85.95 |
| KINGS | 2038 | LDA | Aggregated | Aggregated | DSL | | 1,245 | 44,132 | 5,878 | 0.65 |
| KINGS | 2038 | LDA | Aggregated | Aggregated | ELEC | | 6,205 | 218,245 | 29,618 | 0.00 |
| KINGS | 2038 | LDT1 | Aggregated | Aggregated | GAS | | 11,446 | 357,846 | 52,513 | 10.11 |
| KINGS | 2038 | LDT1 | Aggregated | Aggregated | DSL | | 2 | 50 | 7 | 0.00 |
| KINGS | 2038 | LDT1 | Aggregated | Aggregated | ELEC | | 384 | 13,372 | 1,827 | 0.00 |
| KINGS | 2038 | LDT2 | Aggregated | Aggregated | GAS | | 34,960 | 1,106,585 | 161,286 | 31.11 |
| KINGS | 2038 | LDT2 | Aggregated | Aggregated | DSL | | 344 | 11,189 | 1,611 | 0.22 |
| KINGS | 2038 | LDT2 | Aggregated | Aggregated | ELEC | | 1,417 | 34,074 | 6,735 | 0.00 |
| KINGS | 2038 | MDV | Aggregated | Aggregated | GAS | | 24,080 | 722,893 | 108,812 | 24.84 |
| KINGS | 2038 | MDV | Aggregated | Aggregated | DSL | | 815 | 25,733 | 3,766 | 0.67 |
| KINGS | 2038 | MDV | Aggregated | Aggregated | ELEC | | 1,021 | 24,698 | 4,865 | 0.00 |
| | | | | | | | | 6,134,731 | | 153.55 |
| | | | | | | | | | | 153,551 |
| Passenger Car and Light Truck Fleet Efficiency | | | | | | MPG | | 39.95 | | |

Residential Fleet Mix Average Fuel Efficiency

| FleetMixLa | LDA | LDT1 | LDT2 | MDV | Fraction | LHD1 | LHD2 | MHD | HHD | Fraction |
|---|---|---|---|---|---|---|---|---|---|---|
| Single Fami | 0.5244 | 0.212 | 0.1677 | 0.0563 | 0.9604 | 0.0008 | 0.0009 | 0.0076 | 0.0212 | 0.0305 |
| MPG | | | | | 39.95 | | | | | 9.75 |
| Weighted Average | | 38.67 | | | 38.37 | | | | | 0.30 |

# Appendix A: Emissions Summary

## Emission Summary

| Construction Emissions (Unmitigated Annual) | ROG | NOX | CO | PM10 | PM2.5 | PM2.5 Ex |
|---|---|---|---|---|---|---|
| | Tons per Year | | | | | |
| Phase 1 2022 | 0.37 | **3.43** | **3.03** | 0.53 | **0.30** | 0.14 |
| Phase 1 2023 | 0.28 | 2.21 | 2.64 | 0.27 | 0.14 | 0.09 |
| Phase 1 2024 | 0.26 | 2.10 | 2.61 | 0.26 | 0.13 | 0.08 |
| Phase 1 2025 | 1.60 | 0.74 | 1.09 | 0.08 | 0.04 | 0.03 |
| Phase 2 2026 | 0.32 | 2.89 | 2.96 | **0.56** | 0.27 | 0.09 |
| Phase 2 2027 | 0.28 | 2.42 | 2.77 | 0.38 | 0.15 | 0.07 |
| Phase 2 2028 | 0.28 | 2.40 | 2.72 | 0.38 | 0.15 | 0.07 |
| Phase 2 2029 | 1.26 | 0.85 | 1.13 | 0.12 | 0.05 | 0.03 |
| Phase 3 2030 | 0.24 | 1.33 | 2.35 | 0.25 | 0.12 | 0.03 |
| Phase 3 2031 | 0.19 | 1.17 | 2.21 | 0.08 | 0.04 | 0.04 |
| Phase 3 2032 | 0.97 | 0.33 | 0.68 | 0.02 | 0.01 | 0.01 |
| Phase 4 2034 | 0.27 | 1.44 | 2.44 | 0.36 | 0.18 | 0.04 |
| Phase 4 2035 | 0.18 | 1.11 | 2.22 | 0.09 | 0.03 | 0.01 |
| Phase 4 2036 | 0.18 | 1.11 | 0.22 | 0.09 | 0.03 | 0.01 |
| Phase 4 2037 | **1.34** | 0.42 | 1.02 | 0.03 | 0.02 | 0.01 |
| Total | **8.01** | **23.96** | **30.10** | **3.52** | **1.66** | **0.73** |
| | | | | | | |
| **Highest Emissions Any Year** | **1.34** | **3.43** | **3.03** | **0.56** | **0.30** | |

| Operational Emissions (Unmitigated) | ROG | NOX | CO | PM10 | PM2.5 |
|---|---|---|---|---|---|
| | Tons Per Year | | | | |
| Phase 1 2021 | 3.20 | 3.10 | 17.96 | 3.61 | 1.86 |
| Phase 2 2022 | 2.42 | 1.70 | 12.81 | 2.86 | 1.59 |
| Phase 3 2023 | 1.87 | 1.08 | 9.38 | 2.22 | 1.30 |
| Phase 4 2024 | 2.43 | 0.97 | 10.01 | 2.71 | 1.44 |
| **Total All Phases** | **9.92** | **6.86** | **50.16** | **11.40** | **6.19** |

| **Operational Emissions (Mitigated)** | **ROG** | **NOX** | **CO** | **PM10** | **PM2.5** |
|---|---|---|---|---|---|
| | | | **Tons Per Year** | | |
| Phase 1 2022 | 2.40 | 2.87 | 10.39 | 1.29 | 0.65 |
| Phase 2 2026 | 1.68 | 1.54 | 5.90 | 1.65 | 0.47 |
| Phase 3 2030 | 1.23 | 0.95 | 3.48 | 1.20 | 0.34 |
| Phase 4 2034 | 1.63 | 1.22 | 4.10 | 1.65 | 0.47 |
| **Total All Phases** | **6.94** | **6.57** | **23.87** | **5.79** | **1.93** |
| | | | | | |
| **Project Buildout 2038 (Mitigated)** | **6.33** | **5.28** | **16.94** | **6.86** | **1.94** |

With onsite design features and natural gas fireplaces

**Operations**

| **Maximum Daily Emissions (Max Daily Entire Project)** | **ROG** | **NOX** | **CO** | **PM10** | **PM2.5** |
|---|---|---|---|---|---|
| | | | **Pounds per Day** | | |
| Area | 30.76 | 7.56 | 64.66 | 0.90 | 0.90 |
| Energy | 0.48 | 4.08 | 1.74 | 0.33 | 0.33 |
| Mobile | 0.47 | 1.64 | 4.92 | 2.73 | 0.74 |
| **Total** | **31.70** | **13.29** | **71.31** | **3.96** | **1.96** |
| | | | | | |
| **Mobile from CalEEMod** | 6.81 | 23.93 | 71.79 | 39.88 | 10.75 |
| **Onsite Mobile Emissions within 0.5 mile** | 0.47 | 1.64 | 4.92 | 2.73 | 0.74 |

Mobile reduced by multiplying emissions by 0.5/7.3 mile trip length from CalEEMod

**Max Daily Construction Emissions (Summer)**

| | **ROG** | **NOX** | **CO** | **PM10** | **PM2.5** |
|---|---|---|---|---|---|
| | | | **Pounds per Day** | | |
| Phase 1 | 55.00 | 38.89 | 29.66 | 9.89 | 5.99 |
| Phase 2 | 42.35 | 27.98 | 26.78 | 9.37 | 5.51 |
| Phase 3 | 52.44 | 13.87 | 23.36 | 8.72 | 4.95 |
| Phase 4 | 45.93 | 13.86 | 23.29 | 8.71 | 4.95 |

**Max Daily Construction Emissions (Winter)**

| | Pounds per Day | | | | |
|---|---|---|---|---|---|
| | **ROG** | **NOX** | **CO** | **PM10** | **PM2.5** |
| Phase 1 | 54.99 | 38.90 | 29.56 | 9.89 | 5.99 |
| Phase 2 | 42.34 | 27.98 | 26.70 | 9.37 | 5.51 |
| Phase 3 | 54.44 | 13.87 | 23.30 | 8.72 | 4.95 |
| Phase 4 | 45.93 | 13.87 | 23.23 | 8.71 | 4.95 |

| Highest Phase Emissions | **ROG** | **NOX** | **CO** | **PM10** | **PM2.5** |
|---|---|---|---|---|---|
| | 55.00 | 38.90 | 29.66 | 9.89 | 5.99 |

**Construction GHG Emissions**

| **Year** | **Tons/Year CO2e** |
|---|---|
| Phase 1 2022 | 577.85 |
| Phase 1 2023 | 520.77 |
| Phase 1 2024 | 519.68 |
| Phase 1 2025 | 193.29 |
| Phase 2 2026 | 695.92 |
| Phase 2 2027 | 718.48 |
| Phase 2 2028 | 709.68 |
| Phase 2 2029 | 241.63 |
| Phase 3 2030 | 502.06 |
| Phase 3 2031 | 414.09 |
| Phase 3 2032 | 116.78 |
| Phase 4 2034 | 570.94 |
| Phase 4 2035 | 438.26 |
| Phase 4 2036 | 439.94 |
| Phase 4 2037 | 180.79 |
| **Total** | **6,840.15** |
| **Amortized over 30 years** | **228.01** |

**Operational GHG at Buildout 2038**

| | BAU MTCO2e per Year | 2038 MTCO2e/ year | Reduction Fraction | |
|---|---|---|---|---|
| Area | 1,023.51 | 336.60 | 67.11% | |
| Energy | 2,600.75 | 1,623.29 | 37.6% | |
| Mobile | 8,792.91 | 3,899.51 | 55.7% | |
| Waste | 330.69 | 248.02 | 25.0% | |
| Water | 185.08 | 96.27 | 48.0% | |
| **Total** | 12,932.93 | **6,203.69** | **52.0%** | |
| Construction | 228.01 | **228.01** | 0.0% | |
| Total with Amortized Construction | 13,160.93 | 6,431.69 | **51.1%** | **39.3%** |
| Reduction from BAU | | **6,729.24** | **21.7%** | 29.7% |
| | | | **29.4%** | 21.4% |
| Mobile from CalEEMod | | 4,874.39 | | |
| LCFS in 2030 reduction 20% not in CalEEMod | | 0.8 | | |
| Mobile with LCFS | | **3,899.51** | | |

# Appendix A: CalEEMod Output

# CalEEMod Output

# Phase 1 Construction and Operations (Annual)

# Lacey Ranch Master Plan Phase 1 Const and Ops

## Kings County, Annual

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Apartments Low Rise | 145.00 | Dwelling Unit | 7.26 | 145,000.00 | 415 |
| Single Family Housing | 125.00 | Dwelling Unit | 31.07 | 225,000.00 | 358 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 37 |
| **Climate Zone** | 3 | | | **Operational Year** | 2022 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 290 | **CH4 Intensity (lb/MWhr)** | 0.022 | **N2O Intensity (lb/MWhr)** | 0.005 |

### 1.3 User Entered Comments & Non-Default Data

Lacey Ranch Master Plan Phase 1 Const and Ops - Kings County, Annual

Project Characteristics - PG&E Intensity Factors

Land Use - Project acres

Construction Phase -

Architectural Coating - Rule 4601 Architectural Coatings compliance

Vehicle Trips - ITE 10th Ed Trip Gen SFR 9.44, 9.54, 8.55, Apt 7.32, 8.14, 6.28

Woodstoves - Rule 4901 Residential Woodburning hearths allowed 2 per acre

Area Coating - Rule 4601 Architectural Coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation - 2019 Title 24

Water Mitigation - CalGreen indoor water savings and MWELO outdoor savings

Waste Mitigation - Calrecycle 75% diversion mandate

Fleet Mix - SJVAPCD Residential Fleet Mix for 2022

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblArchitecturalCoating | EF_Residential_Exterior | 150.00 | 65.00 |
| tblArchitecturalCoating | EF_Residential_Interior | 150.00 | 65.00 |
| tblAreaCoating | Area_EF_Residential_Exterior | 150 | 65 |
| tblAreaCoating | Area_EF_Residential_Interior | 150 | 65 |
| tblFleetMix | HHD | 0.16 | 0.02 |
| tblFleetMix | HHD | 0.16 | 0.02 |
| tblFleetMix | LDA | 0.50 | 0.53 |
| tblFleetMix | LDA | 0.50 | 0.53 |
| tblFleetMix | LDT1 | 0.03 | 0.20 |
| tblFleetMix | LDT1 | 0.03 | 0.20 |
| tblFleetMix | LDT2 | 0.15 | 0.17 |

| | | | |
|---|---|---|---|
| tblFleetMix | LDT2 | 0.15 | 0.17 |
| tblFleetMix | LHD1 | 0.02 | 1.3000e-003 |
| tblFleetMix | LHD1 | 0.02 | 1.3000e-003 |
| tblFleetMix | LHD2 | 4.3940e-003 | 9.0000e-004 |
| tblFleetMix | LHD2 | 4.3940e-003 | 9.0000e-004 |
| tblFleetMix | MCY | 5.6650e-003 | 2.5000e-003 |
| tblFleetMix | MCY | 5.6650e-003 | 2.5000e-003 |
| tblFleetMix | MDV | 0.12 | 0.05 |
| tblFleetMix | MDV | 0.12 | 0.05 |
| tblFleetMix | MH | 6.9000e-004 | 1.8000e-003 |
| tblFleetMix | MH | 6.9000e-004 | 1.8000e-003 |
| tblFleetMix | MHD | 0.01 | 8.6000e-003 |
| tblFleetMix | MHD | 0.01 | 8.6000e-003 |
| tblFleetMix | OBUS | 1.7250e-003 | 0.00 |
| tblFleetMix | OBUS | 1.7250e-003 | 0.00 |
| tblFleetMix | SBUS | 9.4300e-004 | 7.0000e-004 |
| tblFleetMix | SBUS | 9.4300e-004 | 7.0000e-004 |
| tblFleetMix | UBUS | 1.7700e-003 | 4.4000e-003 |
| tblFleetMix | UBUS | 1.7700e-003 | 4.0000e-003 |
| tblLandUse | LotAcreage | 9.06 | 7.26 |
| tblLandUse | LotAcreage | 40.58 | 31.07 |
| tblProjectCharacteristics | CH4IntensityFactor | 0.029 | 0.022 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 290 |
| tblProjectCharacteristics | N2OIntensityFactor | 0.006 | 0.005 |
| tblVehicleTrips | ST_TR | 7.16 | 8.14 |
| tblVehicleTrips | ST_TR | 9.91 | 9.54 |
| tblVehicleTrips | SU_TR | 6.07 | 6.28 |

| | | | |
|---|---|---|---|
| tblVehicleTrips | SU_TR | 8.62 | 8.55 |
| tblVehicleTrips | WD_TR | 6.59 | 7.32 |
| tblVehicleTrips | WD_TR | 9.52 | 9.44 |

# 2.0 Emissions Summary

## 2.1 Overall Construction

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2022 | 0.3703 | 3.4318 | 3.0322 | 6.5100e-003 | 0.7122 | 0.1495 | 0.8617 | 0.3150 | 0.1389 | 0.4538 | 0.0000 | 574.4865 | 574.4865 | 0.1344 | 0.0000 | 577.8453 |
| 2023 | 0.2806 | 2.2141 | 2.6410 | 5.8600e-003 | 0.1807 | 0.0922 | 0.2730 | 0.0486 | 0.0868 | 0.1354 | 0.0000 | 518.7113 | 518.7113 | 0.0823 | 0.0000 | 520.7691 |
| 2024 | 0.2648 | 2.0998 | 2.6102 | 5.8500e-003 | 0.1821 | 0.0816 | 0.2637 | 0.0490 | 0.0767 | 0.1257 | 0.0000 | 517.6251 | 517.6251 | 0.0823 | 0.0000 | 519.6833 |
| 2025 | 1.5979 | 0.7424 | 1.0916 | 2.1800e-003 | 0.0537 | 0.0299 | 0.0836 | 0.0144 | 0.0280 | 0.0424 | 0.0000 | 192.3403 | 192.3403 | 0.0380 | 0.0000 | 193.2907 |
| **Maximum** | **1.5979** | **3.4318** | **3.0322** | **6.5100e-003** | **0.7122** | **0.1495** | **0.8617** | **0.3150** | **0.1389** | **0.4538** | **0.0000** | **574.4865** | **574.4865** | **0.1344** | **0.0000** | **577.8453** |

## 2.1 Overall Construction

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2022 | 0.3703 | 3.4318 | 3.0322 | 6.5100e-003 | 0.3842 | 0.1495 | 0.5337 | 0.1589 | 0.1389 | 0.2977 | 0.0000 | 574.4860 | 574.4860 | 0.1344 | 0.0000 | 577.8448 |
| 2023 | 0.2806 | 2.2141 | 2.6410 | 5.8600e-003 | 0.1807 | 0.0922 | 0.2730 | 0.0486 | 0.0868 | 0.1354 | 0.0000 | 518.7109 | 518.7109 | 0.0823 | 0.0000 | 520.7688 |
| 2024 | 0.2648 | 2.0998 | 2.6102 | 5.8500e-003 | 0.1821 | 0.0816 | 0.2637 | 0.0490 | 0.0767 | 0.1257 | 0.0000 | 517.6247 | 517.6247 | 0.0823 | 0.0000 | 519.6830 |
| 2025 | 1.5979 | 0.7424 | 1.0916 | 2.1800e-003 | 0.0537 | 0.0299 | 0.0836 | 0.0144 | 0.0280 | 0.0424 | 0.0000 | 192.3401 | 192.3401 | 0.0380 | 0.0000 | 193.2906 |
| **Maximum** | **1.5979** | **3.4318** | **3.0322** | **6.5100e-003** | **0.3842** | **0.1495** | **0.5337** | **0.1589** | **0.1389** | **0.2977** | **0.0000** | **574.4860** | **574.4860** | **0.1344** | **0.0000** | **577.8448** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **29.05** | **0.00** | **22.13** | **36.56** | **0.00** | **20.61** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| **1** | **1-1-2022** | **3-31-2022** | 1.2761 | 1.2761 |
| **2** | **4-1-2022** | **6-30-2022** | 1.1273 | 1.1273 |
| **3** | **7-1-2022** | **9-30-2022** | 0.7036 | 0.7036 |
| **4** | **10-1-2022** | **12-31-2022** | 0.7057 | 0.7057 |
| **5** | **1-1-2023** | **3-31-2023** | 0.6189 | 0.6189 |
| **6** | **4-1-2023** | **6-30-2023** | 0.6243 | 0.6243 |
| **7** | **7-1-2023** | **9-30-2023** | 0.6311 | 0.6311 |
| **8** | **10-1-2023** | **12-31-2023** | 0.6327 | 0.6327 |

| | | | | |
|---|---|---|---|---|
| **9** | **1-1-2024** | **3-31-2024** | 0.5886 | 0.5886 |
| **10** | **4-1-2024** | **6-30-2024** | 0.5872 | 0.5872 |
| **11** | **7-1-2024** | **9-30-2024** | 0.5937 | 0.5937 |
| **12** | **10-1-2024** | **12-31-2024** | 0.5951 | 0.5951 |
| **13** | **1-1-2025** | **3-31-2025** | 0.5366 | 0.5366 |
| **14** | **4-1-2025** | **6-30-2025** | 0.5943 | 0.5943 |
| **15** | **7-1-2025** | **9-30-2025** | 1.2042 | 1.2042 |
| | | **Highest** | 1.2761 | 1.2761 |

## 2.2 Overall Operational

**Unmitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 2.4491 | 0.2399 | 9.1439 | 0.0239 | | 1.1765 | 1.1765 | | 1.1765 | 1.1765 | 154.9576 | 120.2408 | 275.1983 | 0.7298 | 2.1400e-003 | 294.0823 |
| Energy | 0.0287 | 0.2450 | 0.1043 | 1.5600e-003 | | 0.0198 | 0.0198 | | 0.0198 | 0.0198 | 0.0000 | 517.0530 | 517.0530 | 0.0231 | 9.2200e-003 | 520.3803 |
| Mobile | 0.7185 | 2.6177 | 8.7104 | 0.0249 | 2.3941 | 0.0225 | 2.4166 | 0.6399 | 0.0210 | 0.6609 | 0.0000 | 2,274.5879 | 2,274.5879 | 0.1334 | 0.0000 | 2,277.9239 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 39.7010 | 0.0000 | 39.7010 | 2.3463 | 0.0000 | 98.3575 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 5.5810 | 17.6272 | 23.2082 | 0.5746 | 0.0138 | 41.6962 |
| **Total** | **3.1963** | **3.1026** | **17.9586** | **0.0503** | **2.3941** | **1.2188** | **3.6129** | **0.6399** | **1.2173** | **1.8572** | **200.2395** | **2,929.5088** | **3,129.7483** | **3.8072** | **0.0252** | **3,232.4401** |

## 2.2 Overall Operational

**Mitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 1.6680 | 0.1241 | 2.0499 | 7.5000e-004 | | 0.0193 | 0.0193 | | 0.0193 | 0.0193 | 0.0000 | 120.2408 | 120.2408 | 5.4000e-003 | 2.1400e-003 | 121.0148 |
| Energy | 0.0271 | 0.2311 | 0.0984 | 1.4800e-003 | | 0.0187 | 0.0187 | | 0.0187 | 0.0187 | 0.0000 | 498.8695 | 498.8695 | 0.0227 | 8.8900e-003 | 502.0865 |
| Mobile | 0.7032 | 2.5130 | 8.2442 | 0.0233 | 2.2289 | 0.0211 | 2.2500 | 0.5958 | 0.0197 | 0.6155 | 0.0000 | 2,128.5076 | 2,128.5076 | 0.1280 | 0.0000 | 2,131.7078 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 29.7757 | 0.0000 | 29.7757 | 1.7597 | 0.0000 | 73.7681 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 4.4648 | 14.1017 | 18.5665 | 0.4597 | 0.0111 | 33.3569 |
| **Total** | **2.3982** | **2.8682** | **10.3925** | **0.0255** | **2.2289** | **0.0590** | **2.2879** | **0.5958** | **0.0576** | **0.6534** | **34.2405** | **2,761.7196** | **2,795.9601** | **2.3754** | **0.0221** | **2,861.9341** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **24.97** | **7.55** | **42.13** | **49.35** | **6.90** | **95.16** | **36.67** | **6.90** | **95.27** | **64.82** | **82.90** | **5.73** | **10.67** | **37.61** | **12.30** | **11.46** |

# 3.0 Construction Detail

**Construction Phase**

Lacey Ranch Master Plan Phase 1 Const and Ops - Kings County, Annual

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 1/1/2022 | 2/11/2022 | 5 | 30 | |
| 2 | Grading | Grading | 2/12/2022 | 5/27/2022 | 5 | 75 | |
| 3 | Building Construction | Building Construction | 5/28/2022 | 3/28/2025 | 5 | 740 | |
| 4 | Paving | Paving | 3/29/2025 | 6/13/2025 | 5 | 55 | |
| 5 | Architectural Coating | Architectural Coating | 6/14/2025 | 8/29/2025 | 5 | 55 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 187.5**

**Acres of Paving: 0**

**Residential Indoor: 749,250; Residential Outdoor: 249,750; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

**<u>OffRoad Equipment</u>**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

## Trips and VMT

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 149.00 | 29.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 30.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

## 3.2 Site Preparation - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.2710 | 0.0000 | 0.2710 | 0.1490 | 0.0000 | 0.1490 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0476 | 0.4963 | 0.2955 | 5.7000e-004 | | 0.0242 | 0.0242 | | 0.0223 | 0.0223 | 0.0000 | 50.1591 | 50.1591 | 0.0162 | 0.0000 | 50.5647 |
| **Total** | **0.0476** | **0.4963** | **0.2955** | **5.7000e-004** | **0.2710** | **0.0242** | **0.2952** | **0.1490** | **0.0223** | **0.1712** | **0.0000** | **50.1591** | **50.1591** | **0.0162** | **0.0000** | **50.5647** |

## 3.2 Site Preparation - 2022

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.0200e-003 | 7.4000e-004 | 7.1900e-003 | 2.0000e-005 | 2.1700e-003 | 1.0000e-005 | 2.1800e-003 | 5.8000e-004 | 1.0000e-005 | 5.9000e-004 | 0.0000 | 1.7209 | 1.7209 | 5.0000e-005 | 0.0000 | 1.7223 |
| **Total** | **1.0200e-003** | **7.4000e-004** | **7.1900e-003** | **2.0000e-005** | **2.1700e-003** | **1.0000e-005** | **2.1800e-003** | **5.8000e-004** | **1.0000e-005** | **5.9000e-004** | **0.0000** | **1.7209** | **1.7209** | **5.0000e-005** | **0.0000** | **1.7223** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.1220 | 0.0000 | 0.1220 | 0.0670 | 0.0000 | 0.0670 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0476 | 0.4963 | 0.2955 | 5.7000e-004 | | 0.0242 | 0.0242 | | 0.0223 | 0.0223 | 0.0000 | 50.1590 | 50.1590 | 0.0162 | 0.0000 | 50.5646 |
| **Total** | **0.0476** | **0.4963** | **0.2955** | **5.7000e-004** | **0.1220** | **0.0242** | **0.1461** | **0.0670** | **0.0223** | **0.0893** | **0.0000** | **50.1590** | **50.1590** | **0.0162** | **0.0000** | **50.5646** |

## 3.2 Site Preparation - 2022

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.0200e-003 | 7.4000e-004 | 7.1900e-003 | 2.0000e-005 | 2.1700e-003 | 1.0000e-005 | 2.1800e-003 | 5.8000e-004 | 1.0000e-005 | 5.9000e-004 | 0.0000 | 1.7209 | 1.7209 | 5.0000e-005 | 0.0000 | 1.7223 |
| **Total** | **1.0200e-003** | **7.4000e-004** | **7.1900e-003** | **2.0000e-005** | **2.1700e-003** | **1.0000e-005** | **2.1800e-003** | **5.8000e-004** | **1.0000e-005** | **5.9000e-004** | **0.0000** | **1.7209** | **1.7209** | **5.0000e-005** | **0.0000** | **1.7223** |

## 3.3 Grading - 2022

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.3253 | 0.0000 | 0.3253 | 0.1349 | 0.0000 | 0.1349 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.1359 | 1.4566 | 1.0891 | 2.3300e-003 | | 0.0613 | 0.0613 | | 0.0564 | 0.0564 | 0.0000 | 204.5048 | 204.5048 | 0.0661 | 0.0000 | 206.1583 |
| **Total** | **0.1359** | **1.4566** | **1.0891** | **2.3300e-003** | **0.3253** | **0.0613** | **0.3866** | **0.1349** | **0.0564** | **0.1913** | **0.0000** | **204.5048** | **204.5048** | **0.0661** | **0.0000** | **206.1583** |

## 3.3 Grading - 2022

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.8200e-003 | 2.0500e-003 | 0.0200 | 5.0000e-005 | 6.0300e-003 | 4.0000e-005 | 6.0600e-003 | 1.6000e-003 | 4.0000e-005 | 1.6400e-003 | 0.0000 | 4.7804 | 4.7804 | 1.5000e-004 | 0.0000 | 4.7841 |
| **Total** | **2.8200e-003** | **2.0500e-003** | **0.0200** | **5.0000e-005** | **6.0300e-003** | **4.0000e-005** | **6.0600e-003** | **1.6000e-003** | **4.0000e-005** | **1.6400e-003** | **0.0000** | **4.7804** | **4.7804** | **1.5000e-004** | **0.0000** | **4.7841** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.1464 | 0.0000 | 0.1464 | 0.0607 | 0.0000 | 0.0607 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.1359 | 1.4566 | 1.0891 | 2.3300e-003 | | 0.0613 | 0.0613 | | 0.0564 | 0.0564 | 0.0000 | 204.5045 | 204.5045 | 0.0661 | 0.0000 | 206.1580 |
| **Total** | **0.1359** | **1.4566** | **1.0891** | **2.3300e-003** | **0.1464** | **0.0613** | **0.2077** | **0.0607** | **0.0564** | **0.1171** | **0.0000** | **204.5045** | **204.5045** | **0.0661** | **0.0000** | **206.1580** |

## 3.3 Grading - 2022

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.8200e-003 | 2.0500e-003 | 0.0200 | 5.0000e-005 | 6.0300e-003 | 4.0000e-005 | 6.0600e-003 | 1.6000e-003 | 4.0000e-005 | 1.6400e-003 | 0.0000 | 4.7804 | 4.7804 | 1.5000e-004 | 0.0000 | 4.7841 |
| **Total** | **2.8200e-003** | **2.0500e-003** | **0.0200** | **5.0000e-005** | **6.0300e-003** | **4.0000e-005** | **6.0600e-003** | **1.6000e-003** | **4.0000e-005** | **1.6400e-003** | **0.0000** | **4.7804** | **4.7804** | **1.5000e-004** | **0.0000** | **4.7841** |

## 3.4 Building Construction - 2022

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1322 | 1.2102 | 1.2682 | 2.0900e-003 | | 0.0627 | 0.0627 | | 0.0590 | 0.0590 | 0.0000 | 179.5871 | 179.5871 | 0.0430 | 0.0000 | 180.6627 |
| **Total** | **0.1322** | **1.2102** | **1.2682** | **2.0900e-003** | | **0.0627** | **0.0627** | | **0.0590** | **0.0590** | **0.0000** | **179.5871** | **179.5871** | **0.0430** | **0.0000** | **180.6627** |

## 3.4 Building Construction - 2022

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 7.2500e-003 | 0.2343 | 0.0450 | 6.3000e-004 | 0.0150 | 6.6000e-004 | 0.0156 | 4.3200e-003 | 6.3000e-004 | 4.9500e-003 | 0.0000 | 60.1329 | 60.1329 | 6.4600e-003 | 0.0000 | 60.2944 |
| Worker | 0.0435 | 0.0316 | 0.3073 | 8.1000e-004 | 0.0928 | 5.9000e-004 | 0.0934 | 0.0247 | 5.4000e-004 | 0.0252 | 0.0000 | 73.6014 | 73.6014 | 2.3000e-003 | 0.0000 | 73.6589 |
| **Total** | **0.0507** | **0.2659** | **0.3523** | **1.4400e-003** | **0.1077** | **1.2500e-003** | **0.1090** | **0.0290** | **1.1700e-003** | **0.0301** | **0.0000** | **133.7343** | **133.7343** | **8.7600e-003** | **0.0000** | **133.9533** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1322 | 1.2102 | 1.2682 | 2.0900e-003 | | 0.0627 | 0.0627 | | 0.0590 | 0.0590 | 0.0000 | 179.5869 | 179.5869 | 0.0430 | 0.0000 | 180.6625 |
| **Total** | **0.1322** | **1.2102** | **1.2682** | **2.0900e-003** | | **0.0627** | **0.0627** | | **0.0590** | **0.0590** | **0.0000** | **179.5869** | **179.5869** | **0.0430** | **0.0000** | **180.6625** |

## 3.4 Building Construction - 2022

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 7.2500e-003 | 0.2343 | 0.0450 | 6.3000e-004 | 0.0150 | 6.6000e-004 | 0.0156 | 4.3200e-003 | 6.3000e-004 | 4.9500e-003 | 0.0000 | 60.1329 | 60.1329 | 6.4600e-003 | 0.0000 | 60.2944 |
| Worker | 0.0435 | 0.0316 | 0.3073 | 8.1000e-004 | 0.0928 | 5.9000e-004 | 0.0934 | 0.0247 | 5.4000e-004 | 0.0252 | 0.0000 | 73.6014 | 73.6014 | 2.3000e-003 | 0.0000 | 73.6589 |
| **Total** | **0.0507** | **0.2659** | **0.3523** | **1.4400e-003** | **0.1077** | **1.2500e-003** | **0.1090** | **0.0290** | **1.1700e-003** | **0.0301** | **0.0000** | **133.7343** | **133.7343** | **8.7600e-003** | **0.0000** | **133.9533** |

## 3.4 Building Construction - 2023

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.2045 | 1.8700 | 2.1117 | 3.5000e-003 | | 0.0910 | 0.0910 | | 0.0856 | 0.0856 | 0.0000 | 301.3462 | 301.3462 | 0.0717 | 0.0000 | 303.1383 |
| **Total** | **0.2045** | **1.8700** | **2.1117** | **3.5000e-003** | | **0.0910** | **0.0910** | | **0.0856** | **0.0856** | **0.0000** | **301.3462** | **301.3462** | **0.0717** | **0.0000** | **303.1383** |

## 3.4 Building Construction - 2023

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 8.4100e-003 | 0.2967 | 0.0622 | 1.0400e-003 | 0.0251 | 3.0000e-004 | 0.0254 | 7.2500e-003 | 2.9000e-004 | 7.5400e-003 | 0.0000 | 98.4644 | 98.4644 | 7.2100e-003 | 0.0000 | 98.6447 |
| Worker | 0.0677 | 0.0474 | 0.4671 | 1.3200e-003 | 0.1556 | 9.6000e-004 | 0.1566 | 0.0414 | 8.9000e-004 | 0.0422 | 0.0000 | 118.9007 | 118.9007 | 3.4200e-003 | 0.0000 | 118.9861 |
| **Total** | **0.0761** | **0.3440** | **0.5293** | **2.3600e-003** | **0.1807** | **1.2600e-003** | **0.1820** | **0.0486** | **1.1800e-003** | **0.0498** | **0.0000** | **217.3651** | **217.3651** | **0.0106** | **0.0000** | **217.6308** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.2045 | 1.8700 | 2.1117 | 3.5000e-003 | | 0.0910 | 0.0910 | | 0.0856 | 0.0856 | 0.0000 | 301.3458 | 301.3458 | 0.0717 | 0.0000 | 303.1380 |
| **Total** | **0.2045** | **1.8700** | **2.1117** | **3.5000e-003** | | **0.0910** | **0.0910** | | **0.0856** | **0.0856** | **0.0000** | **301.3458** | **301.3458** | **0.0717** | **0.0000** | **303.1380** |

## 3.4 Building Construction - 2023

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 8.4100e-003 | 0.2967 | 0.0622 | 1.0400e-003 | 0.0251 | 3.0000e-004 | 0.0254 | 7.2500e-003 | 2.9000e-004 | 7.5400e-003 | 0.0000 | 98.4644 | 98.4644 | 7.2100e-003 | 0.0000 | 98.6447 |
| Worker | 0.0677 | 0.0474 | 0.4671 | 1.3200e-003 | 0.1556 | 9.6000e-004 | 0.1566 | 0.0414 | 8.9000e-004 | 0.0422 | 0.0000 | 118.9007 | 118.9007 | 3.4200e-003 | 0.0000 | 118.9861 |
| **Total** | **0.0761** | **0.3440** | **0.5293** | **2.3600e-003** | **0.1807** | **1.2600e-003** | **0.1820** | **0.0486** | **1.1800e-003** | **0.0498** | **0.0000** | **217.3651** | **217.3651** | **0.0106** | **0.0000** | **217.6308** |

## 3.4 Building Construction - 2024

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1928 | 1.7611 | 2.1179 | 3.5300e-003 | | 0.0803 | 0.0803 | | 0.0756 | 0.0756 | 0.0000 | 303.7223 | 303.7223 | 0.0718 | 0.0000 | 305.5179 |
| **Total** | **0.1928** | **1.7611** | **2.1179** | **3.5300e-003** | | **0.0803** | **0.0803** | | **0.0756** | **0.0756** | **0.0000** | **303.7223** | **303.7223** | **0.0718** | **0.0000** | **305.5179** |

## 3.4 Building Construction - 2024

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 8.2200e-003 | 0.2957 | 0.0594 | 1.0400e-003 | 0.0253 | 3.0000e-004 | 0.0256 | 7.3100e-003 | 2.9000e-004 | 7.5900e-003 | 0.0000 | 98.4275 | 98.4275 | 7.4200e-003 | 0.0000 | 98.6131 |
| Worker | 0.0638 | 0.0430 | 0.4330 | 1.2800e-003 | 0.1568 | 9.5000e-004 | 0.1578 | 0.0417 | 8.7000e-004 | 0.0425 | 0.0000 | 115.4752 | 115.4752 | 3.0900e-003 | 0.0000 | 115.5524 |
| **Total** | **0.0720** | **0.3387** | **0.4924** | **2.3200e-003** | **0.1821** | **1.2500e-003** | **0.1834** | **0.0490** | **1.1600e-003** | **0.0501** | **0.0000** | **213.9027** | **213.9027** | **0.0105** | **0.0000** | **214.1655** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1928 | 1.7611 | 2.1179 | 3.5300e-003 | | 0.0803 | 0.0803 | | 0.0756 | 0.0756 | 0.0000 | 303.7220 | 303.7220 | 0.0718 | 0.0000 | 305.5175 |
| **Total** | **0.1928** | **1.7611** | **2.1179** | **3.5300e-003** | | **0.0803** | **0.0803** | | **0.0756** | **0.0756** | **0.0000** | **303.7220** | **303.7220** | **0.0718** | **0.0000** | **305.5175** |

## 3.4 Building Construction - 2024

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 8.2200e-003 | 0.2957 | 0.0594 | 1.0400e-003 | 0.0253 | 3.0000e-004 | 0.0256 | 7.3100e-003 | 2.9000e-004 | 7.5900e-003 | 0.0000 | 98.4275 | 98.4275 | 7.4200e-003 | 0.0000 | 98.6131 |
| Worker | 0.0638 | 0.0430 | 0.4330 | 1.2800e-003 | 0.1568 | 9.5000e-004 | 0.1578 | 0.0417 | 8.7000e-004 | 0.0425 | 0.0000 | 115.4752 | 115.4752 | 3.0900e-003 | 0.0000 | 115.5524 |
| **Total** | **0.0720** | **0.3387** | **0.4924** | **2.3200e-003** | **0.1821** | **1.2500e-003** | **0.1834** | **0.0490** | **1.1600e-003** | **0.0501** | **0.0000** | **213.9027** | **213.9027** | **0.0105** | **0.0000** | **214.1655** |

## 3.4 Building Construction - 2025

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0431 | 0.3928 | 0.5067 | 8.5000e-004 | | 0.0166 | 0.0166 | | 0.0156 | 0.0156 | 0.0000 | 73.0546 | 73.0546 | 0.0172 | 0.0000 | 73.4840 |
| **Total** | **0.0431** | **0.3928** | **0.5067** | **8.5000e-004** | | **0.0166** | **0.0166** | | **0.0156** | **0.0156** | **0.0000** | **73.0546** | **73.0546** | **0.0172** | **0.0000** | **73.4840** |

## 3.4 Building Construction - 2025

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 1.9300e-003 | 0.0703 | 0.0136 | 2.5000e-004 | 6.0800e-003 | 7.0000e-005 | 6.1600e-003 | 1.7600e-003 | 7.0000e-005 | 1.8300e-003 | 0.0000 | 23.4925 | 23.4925 | 1.8200e-003 | 0.0000 | 23.5379 |
| Worker | 0.0144 | 9.3300e-003 | 0.0955 | 3.0000e-004 | 0.0377 | 2.2000e-004 | 0.0379 | 0.0100 | 2.1000e-004 | 0.0102 | 0.0000 | 26.6834 | 26.6834 | 6.6000e-004 | 0.0000 | 26.7000 |
| **Total** | **0.0163** | **0.0797** | **0.1091** | **5.5000e-004** | **0.0438** | **2.9000e-004** | **0.0441** | **0.0118** | **2.8000e-004** | **0.0121** | **0.0000** | **50.1759** | **50.1759** | **2.4800e-003** | **0.0000** | **50.2379** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0431 | 0.3928 | 0.5067 | 8.5000e-004 | | 0.0166 | 0.0166 | | 0.0156 | 0.0156 | 0.0000 | 73.0545 | 73.0545 | 0.0172 | 0.0000 | 73.4839 |
| **Total** | **0.0431** | **0.3928** | **0.5067** | **8.5000e-004** | | **0.0166** | **0.0166** | | **0.0156** | **0.0156** | **0.0000** | **73.0545** | **73.0545** | **0.0172** | **0.0000** | **73.4839** |

## 3.4 Building Construction - 2025

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 1.9300e-003 | 0.0703 | 0.0136 | 2.5000e-004 | 6.0800e-003 | 7.0000e-005 | 6.1600e-003 | 1.7600e-003 | 7.0000e-005 | 1.8300e-003 | 0.0000 | 23.4925 | 23.4925 | 1.8200e-003 | 0.0000 | 23.5379 |
| Worker | 0.0144 | 9.3300e-003 | 0.0955 | 3.0000e-004 | 0.0377 | 2.2000e-004 | 0.0379 | 0.0100 | 2.1000e-004 | 0.0102 | 0.0000 | 26.6834 | 26.6834 | 6.6000e-004 | 0.0000 | 26.7000 |
| **Total** | **0.0163** | **0.0797** | **0.1091** | **5.5000e-004** | **0.0438** | **2.9000e-004** | **0.0441** | **0.0118** | **2.8000e-004** | **0.0121** | **0.0000** | **50.1759** | **50.1759** | **2.4800e-003** | **0.0000** | **50.2379** |

## 3.5 Paving - 2025

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0252 | 0.2360 | 0.4009 | 6.3000e-004 | | 0.0115 | 0.0115 | | 0.0106 | 0.0106 | 0.0000 | 55.0530 | 55.0530 | 0.0178 | 0.0000 | 55.4981 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0252** | **0.2360** | **0.4009** | **6.3000e-004** | | **0.0115** | **0.0115** | | **0.0106** | **0.0106** | **0.0000** | **55.0530** | **55.0530** | **0.0178** | **0.0000** | **55.4981** |

## 3.5 Paving - 2025

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.2700e-003 | 8.2000e-004 | 8.4000e-003 | 3.0000e-005 | 3.3100e-003 | 2.0000e-005 | 3.3300e-003 | 8.8000e-004 | 2.0000e-005 | 9.0000e-004 | 0.0000 | 2.3451 | 2.3451 | 6.0000e-005 | 0.0000 | 2.3466 |
| **Total** | **1.2700e-003** | **8.2000e-004** | **8.4000e-003** | **3.0000e-005** | **3.3100e-003** | **2.0000e-005** | **3.3300e-003** | **8.8000e-004** | **2.0000e-005** | **9.0000e-004** | **0.0000** | **2.3451** | **2.3451** | **6.0000e-005** | **0.0000** | **2.3466** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0252 | 0.2360 | 0.4009 | 6.3000e-004 | | 0.0115 | 0.0115 | | 0.0106 | 0.0106 | 0.0000 | 55.0529 | 55.0529 | 0.0178 | 0.0000 | 55.4980 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0252** | **0.2360** | **0.4009** | **6.3000e-004** | | **0.0115** | **0.0115** | | **0.0106** | **0.0106** | **0.0000** | **55.0529** | **55.0529** | **0.0178** | **0.0000** | **55.4980** |

## 3.5 Paving - 2025

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.2700e-003 | 8.2000e-004 | 8.4000e-003 | 3.0000e-005 | 3.3100e-003 | 2.0000e-005 | 3.3300e-003 | 8.8000e-004 | 2.0000e-005 | 9.0000e-004 | 0.0000 | 2.3451 | 2.3451 | 6.0000e-005 | 0.0000 | 2.3466 |
| **Total** | **1.2700e-003** | **8.2000e-004** | **8.4000e-003** | **3.0000e-005** | **3.3100e-003** | **2.0000e-005** | **3.3300e-003** | **8.8000e-004** | **2.0000e-005** | **9.0000e-004** | **0.0000** | **2.3451** | **2.3451** | **6.0000e-005** | **0.0000** | **2.3466** |

## 3.6 Architectural Coating - 2025

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.5049 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 4.7000e-003 | 0.0315 | 0.0498 | 8.0000e-005 | | 1.4200e-003 | 1.4200e-003 | | 1.4200e-003 | 1.4200e-003 | 0.0000 | 7.0215 | 7.0215 | 3.8000e-004 | 0.0000 | 7.0310 |
| **Total** | **1.5096** | **0.0315** | **0.0498** | **8.0000e-005** | | **1.4200e-003** | **1.4200e-003** | | **1.4200e-003** | **1.4200e-003** | **0.0000** | **7.0215** | **7.0215** | **3.8000e-004** | **0.0000** | **7.0310** |

## 3.6 Architectural Coating - 2025

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.5300e-003 | 1.6400e-003 | 0.0168 | 5.0000e-005 | 6.6300e-003 | 4.0000e-005 | 6.6700e-003 | 1.7600e-003 | 4.0000e-005 | 1.8000e-003 | 0.0000 | 4.6903 | 4.6903 | 1.2000e-004 | 0.0000 | 4.6932 |
| **Total** | **2.5300e-003** | **1.6400e-003** | **0.0168** | **5.0000e-005** | **6.6300e-003** | **4.0000e-005** | **6.6700e-003** | **1.7600e-003** | **4.0000e-005** | **1.8000e-003** | **0.0000** | **4.6903** | **4.6903** | **1.2000e-004** | **0.0000** | **4.6932** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.5049 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 4.7000e-003 | 0.0315 | 0.0498 | 8.0000e-005 | | 1.4200e-003 | 1.4200e-003 | | 1.4200e-003 | 1.4200e-003 | 0.0000 | 7.0214 | 7.0214 | 3.8000e-004 | 0.0000 | 7.0310 |
| **Total** | **1.5096** | **0.0315** | **0.0498** | **8.0000e-005** | | **1.4200e-003** | **1.4200e-003** | | **1.4200e-003** | **1.4200e-003** | **0.0000** | **7.0214** | **7.0214** | **3.8000e-004** | **0.0000** | **7.0310** |

## 3.6 Architectural Coating - 2025

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.5300e-003 | 1.6400e-003 | 0.0168 | 5.0000e-005 | 6.6300e-003 | 4.0000e-005 | 6.6700e-003 | 1.7600e-003 | 4.0000e-005 | 1.8000e-003 | 0.0000 | 4.6903 | 4.6903 | 1.2000e-004 | 0.0000 | 4.6932 |
| **Total** | **2.5300e-003** | **1.6400e-003** | **0.0168** | **5.0000e-005** | **6.6300e-003** | **4.0000e-005** | **6.6700e-003** | **1.7600e-003** | **4.0000e-005** | **1.8000e-003** | **0.0000** | **4.6903** | **4.6903** | **1.2000e-004** | **0.0000** | **4.6932** |

# 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

| Category | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.7032 | 2.5130 | 8.2442 | 0.0233 | 2.2289 | 0.0211 | 2.2500 | 0.5958 | 0.0197 | 0.6155 | 0.0000 | 2,128.5076 | 2,128.5076 | 0.1280 | 0.0000 | 2,131.7078 |
| Unmitigated | 0.7185 | 2.6177 | 8.7104 | 0.0249 | 2.3941 | 0.0225 | 2.4166 | 0.6399 | 0.0210 | 0.6609 | 0.0000 | 2,274.5879 | 2,274.5879 | 0.1334 | 0.0000 | 2,277.9239 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Apartments Low Rise | 1,061.40 | 1,180.30 | 910.60 | 3,024,947 | 2,816,226 |
| Single Family Housing | 1,180.00 | 1,192.50 | 1068.75 | 3,337,076 | 3,106,817 |
| Total | 2,241.40 | 2,372.80 | 1,979.35 | 6,362,023 | 5,923,043 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Apartments Low Rise | 10.80 | 7.30 | 7.50 | 42.30 | 19.60 | 38.10 | 86 | 11 | 3 |
| Single Family Housing | 10.80 | 7.30 | 7.50 | 42.30 | 19.60 | 38.10 | 86 | 11 | 3 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Low Rise | 0.534300 | 0.203000 | 0.167300 | 0.054500 | 0.001300 | 0.000900 | 0.008600 | 0.020700 | 0.000000 | 0.004400 | 0.002500 | 0.000700 | 0.001800 |
| Single Family Housing | 0.534300 | 0.203000 | 0.167300 | 0.054500 | 0.001300 | 0.000900 | 0.008600 | 0.020700 | 0.000000 | 0.004000 | 0.002500 | 0.000700 | 0.001800 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Electricity Mitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 231.1940 | 231.1940 | 0.0175 | 3.9900e-003 | 232.8203 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 233.2674 | 233.2674 | 0.0177 | 4.0200e-003 | 234.9083 |
| NaturalGas Mitigated | 0.0271 | 0.2311 | 0.0984 | 1.4800e-003 | | 0.0187 | 0.0187 | | 0.0187 | 0.0187 | 0.0000 | 267.6756 | 267.6756 | 5.1300e-003 | 4.9100e-003 | 269.2662 |
| NaturalGas Unmitigated | 0.0287 | 0.2450 | 0.1043 | 1.5600e-003 | | 0.0198 | 0.0198 | | 0.0198 | 0.0198 | 0.0000 | 283.7856 | 283.7856 | 5.4400e-003 | 5.2000e-003 | 285.4720 |

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Apartments Low Rise | 2.04979e+006 | 0.0111 | 0.0945 | 0.0402 | 6.0000e-004 | | 7.6400e-003 | 7.6400e-003 | | 7.6400e-003 | 7.6400e-003 | 0.0000 | 109.3844 | 109.3844 | 2.1000e-003 | 2.0100e-003 | 110.0344 |
| Single Family Housing | 3.26816e+006 | 0.0176 | 0.1506 | 0.0641 | 9.6000e-004 | | 0.0122 | 0.0122 | | 0.0122 | 0.0122 | 0.0000 | 174.4012 | 174.4012 | 3.3400e-003 | 3.2000e-003 | 175.4376 |
| **Total** | | **0.0287** | **0.2450** | **0.1043** | **1.5600e-003** | | **0.0198** | **0.0198** | | **0.0198** | **0.0198** | **0.0000** | **283.7856** | **283.7856** | **5.4400e-003** | **5.2100e-003** | **285.4720** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Apartments Low Rise | 1.94409e+006 | 0.0105 | 0.0896 | 0.0381 | 5.7000e-004 | | 7.2400e-003 | 7.2400e-003 | | 7.2400e-003 | 7.2400e-003 | 0.0000 | 103.7441 | 103.7441 | 1.9900e-003 | 1.9000e-003 | 104.3606 |
| Single Family Housing | 3.07196e+006 | 0.0166 | 0.1416 | 0.0602 | 9.0000e-004 | | 0.0114 | 0.0114 | | 0.0114 | 0.0114 | 0.0000 | 163.9315 | 163.9315 | 3.1400e-003 | 3.0100e-003 | 164.9057 |
| **Total** | | **0.0270** | **0.2311** | **0.0984** | **1.4700e-003** | | **0.0187** | **0.0187** | | **0.0187** | **0.0187** | **0.0000** | **267.6756** | **267.6756** | **5.1300e-003** | **4.9100e-003** | **269.2662** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Apartments Low Rise | 678240 | 89.2170 | 6.7700e-003 | 1.5400e-003 | 89.8446 |
| Single Family Housing | 1.09509e+006 | 144.0504 | 0.0109 | 2.4800e-003 | 145.0637 |
| **Total** | | **233.2674** | **0.0177** | **4.0200e-003** | **234.9083** |

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Apartments Low Rise | 671192 | 88.2898 | 6.7000e-003 | 1.5200e-003 | 88.9109 |
| Single Family Housing | 1.08638e+006 | 142.9041 | 0.0108 | 2.4600e-003 | 143.9094 |
| **Total** | | **231.1940** | **0.0175** | **3.9800e-003** | **232.8203** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 1.6680 | 0.1241 | 2.0499 | 7.5000e-004 | | 0.0193 | 0.0193 | | 0.0193 | 0.0193 | 0.0000 | 120.2408 | 120.2408 | 5.4000e-003 | 2.1400e-003 | 121.0148 |
| Unmitigated | 2.4491 | 0.2399 | 9.1439 | 0.0239 | | 1.1765 | 1.1765 | | 1.1765 | 1.1765 | 154.9576 | 120.2408 | 275.1983 | 0.7298 | 2.1400e-003 | 294.0823 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.1505 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 1.4450 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 0.7930 | 0.2167 | 7.1370 | 0.0238 | | 1.1654 | 1.1654 | | 1.1654 | 1.1654 | 154.9576 | 116.9660 | 271.9236 | 0.7266 | 2.1400e-003 | 290.7285 |
| Landscaping | 0.0606 | 0.0232 | 2.0069 | 1.1000e-004 | | 0.0111 | 0.0111 | | 0.0111 | 0.0111 | 0.0000 | 3.2748 | 3.2748 | 3.1600e-003 | 0.0000 | 3.3538 |
| **Total** | **2.4491** | **0.2399** | **9.1439** | **0.0239** | | **1.1765** | **1.1765** | | **1.1765** | **1.1765** | **154.9576** | **120.2408** | **275.1984** | **0.7298** | **2.1400e-003** | **294.0823** |

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.1505 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 1.4450 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 0.0118 | 0.1010 | 0.0430 | 6.4000e-004 | | 8.1700e-003 | 8.1700e-003 | | 8.1700e-003 | 8.1700e-003 | 0.0000 | 116.9660 | 116.9660 | 2.2400e-003 | 2.1400e-003 | 117.6611 |
| Landscaping | 0.0606 | 0.0232 | 2.0069 | 1.1000e-004 | | 0.0111 | 0.0111 | | 0.0111 | 0.0111 | 0.0000 | 3.2748 | 3.2748 | 3.1600e-003 | 0.0000 | 3.3538 |
| **Total** | **1.6680** | **0.1242** | **2.0499** | **7.5000e-004** | | **0.0193** | **0.0193** | | **0.0193** | **0.0193** | **0.0000** | **120.2408** | **120.2408** | **5.4000e-003** | **2.1400e-003** | **121.0148** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 18.5665 | 0.4597 | 0.0111 | 33.3569 |
| Unmitigated | 23.2082 | 0.5746 | 0.0138 | 41.6962 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Apartments Low Rise | 9.44733 / 5.95593 | 12.4636 | 0.3086 | 7.4300e-003 | 22.3924 |
| Single Family Housing | 8.14425 / 5.13442 | 10.7445 | 0.2660 | 6.4100e-003 | 19.3038 |
| **Total** | | **23.2082** | **0.5746** | **0.0138** | **41.6962** |

## 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Apartments Low Rise | 7.55787 / 4.76474 | 9.9709 | 0.2469 | 5.9500e-003 | 17.9139 |
| Single Family Housing | 6.5154 / 4.10754 | 8.5956 | 0.2128 | 5.1300e-003 | 15.4430 |
| **Total** | | **18.5665** | **0.4597** | **0.0111** | **33.3569** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 29.7757 | 1.7597 | 0.0000 | 73.7681 |
| Unmitigated | 39.7010 | 2.3463 | 0.0000 | 98.3575 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Apartments Low Rise | 66.7 | 13.5395 | 0.8002 | 0.0000 | 33.5435 |
| Single Family Housing | 128.88 | 26.1615 | 1.5461 | 0.0000 | 64.8140 |
| **Total** | | **39.7010** | **2.3463** | **0.0000** | **98.3575** |

## 8.2 Waste by Land Use

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Apartments Low Rise | 50.025 | 10.1546 | 0.6001 | 0.0000 | 25.1577 |
| Single Family Housing | 96.66 | 19.6211 | 1.1596 | 0.0000 | 48.6105 |
| **Total** | | **29.7757** | **1.7597** | **0.0000** | **73.7681** |

# 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

# 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

# 11.0 Vegetation

# CalEEMod Output

# Phase 2 Construction and Operations (Annual)

# Lacey Ranch Master Plan Phase 2 Const and Ops

## Kings County, Annual

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Apartments Low Rise | 59.00 | Dwelling Unit | 4.88 | 59,000.00 | 169 |
| Single Family Housing | 125.00 | Dwelling Unit | 31.07 | 225,000.00 | 358 |
| City Park | 7.90 | Acre | 7.90 | 344,124.00 | 0 |

### 1.2 Other Project Characteristics

**Urbanization** Urban **Wind Speed (m/s)** 2.2 **Precipitation Freq (Days)** 37

**Climate Zone** 3 **Operational Year** 2026

**Utility Company** Pacific Gas & Electric Company

**CO2 Intensity (lb/MWhr)** 290 **CH4 Intensity (lb/MWhr)** 0.022 **N2O Intensity (lb/MWhr)** 0.005

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E Intensity Factors

Land Use - Project acres

Construction Phase -

Architectural Coating - Rule 4601 Architectural Coatings compliance

Vehicle Trips - ITE 10th Ed Trip Gen SFR 9.44, 9.54, 8.55, Apt 7.32, 8.14, 6.28

Woodstoves - Rule 4901 Residential Woodburning hearths allowed 2 per acre

Area Coating - Rule 4601 Architectural Coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Architectural Coatings

Energy Mitigation - 2019 Title 24

Water Mitigation - CalGreen indoor water savings and MWELO outdoor savings

Waste Mitigation - Calrecycle 75% diversion mandate

Fleet Mix - SJVAPCD Residential Fleet Mix for 2026

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblArchitecturalCoating | EF_Residential_Exterior | 150.00 | 65.00 |
| tblArchitecturalCoating | EF_Residential_Interior | 150.00 | 65.00 |
| tblAreaCoating | Area_EF_Residential_Exterior | 150 | 65 |
| tblAreaCoating | Area_EF_Residential_Interior | 150 | 65 |
| tblFleetMix | HHD | 0.17 | 0.02 |
| tblFleetMix | HHD | 0.17 | 0.02 |
| tblFleetMix | HHD | 0.17 | 0.02 |
| tblFleetMix | LDA | 0.52 | 0.52 |
| tblFleetMix | LDA | 0.52 | 0.52 |
| tblFleetMix | LDA | 0.52 | 0.52 |
| tblFleetMix | LDT1 | 0.03 | 0.21 |

| | | | |
|---|---|---|---|
| tblFleetMix | LDT1 | 0.03 | 0.21 |
| tblFleetMix | LDT1 | 0.03 | 0.21 |
| tblFleetMix | LDT2 | 0.15 | 0.17 |
| tblFleetMix | LDT2 | 0.15 | 0.17 |
| tblFleetMix | LDT2 | 0.15 | 0.17 |
| tblFleetMix | LHD1 | 0.01 | 8.0000e-004 |
| tblFleetMix | LHD1 | 0.01 | 8.0000e-004 |
| tblFleetMix | LHD1 | 0.01 | 8.0000e-004 |
| tblFleetMix | LHD2 | 3.8430e-003 | 9.0000e-004 |
| tblFleetMix | LHD2 | 3.8430e-003 | 9.0000e-004 |
| tblFleetMix | LHD2 | 3.8430e-003 | 9.0000e-004 |
| tblFleetMix | MCY | 5.2980e-003 | 2.5000e-003 |
| tblFleetMix | MCY | 5.2980e-003 | 2.5000e-003 |
| tblFleetMix | MCY | 5.2980e-003 | 2.5000e-003 |
| tblFleetMix | MDV | 0.10 | 0.06 |
| tblFleetMix | MDV | 0.10 | 0.06 |
| tblFleetMix | MDV | 0.10 | 0.06 |
| tblFleetMix | MH | 5.5700e-004 | 2.3000e-003 |
| tblFleetMix | MH | 5.5700e-004 | 2.3000e-003 |
| tblFleetMix | MH | 5.5700e-004 | 2.3000e-003 |
| tblFleetMix | MHD | 0.01 | 7.5000e-003 |
| tblFleetMix | MHD | 0.01 | 7.5000e-003 |
| tblFleetMix | MHD | 0.01 | 7.5000e-003 |
| tblFleetMix | OBUS | 1.6570e-003 | 0.00 |
| tblFleetMix | OBUS | 1.6570e-003 | 0.00 |
| tblFleetMix | OBUS | 1.6570e-003 | 0.00 |
| tblFleetMix | SBUS | 8.7300e-004 | 2.0000e-004 |

| | | | |
|---|---|---|---|
| tblFleetMix | SBUS | 8.7300e-004 | 2.0000e-004 |
| tblFleetMix | SBUS | 8.7300e-004 | 2.0000e-004 |
| tblFleetMix | UBUS | 1.5200e-003 | 4.4000e-003 |
| tblFleetMix | UBUS | 1.5200e-003 | 4.4000e-003 |
| tblFleetMix | UBUS | 1.5200e-003 | 4.4000e-003 |
| tblLandUse | LotAcreage | 3.69 | 4.88 |
| tblLandUse | LotAcreage | 40.58 | 31.07 |
| tblProjectCharacteristics | CH4IntensityFactor | 0.029 | 0.022 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 290 |
| tblProjectCharacteristics | N2OIntensityFactor | 0.006 | 0.005 |

## 2.0 Emissions Summary

### 2.1 Overall Construction

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2026 | 0.3203 | 2.8851 | 2.9606 | 7.7600e-003 | 0.7893 | 0.1012 | 0.8905 | 0.3360 | 0.0940 | 0.4300 | 0.0000 | 692.4336 | 692.4336 | 0.1394 | 0.0000 | 695.9173 |
| 2027 | 0.2815 | 2.4246 | 2.7730 | 7.9600e-003 | 0.3093 | 0.0710 | 0.3803 | 0.0837 | 0.0667 | 0.1504 | 0.0000 | 716.1040 | 716.1040 | 0.0950 | 0.0000 | 718.4795 |
| 2028 | 0.2750 | 2.4047 | 2.7228 | 7.8600e-003 | 0.3081 | 0.0706 | 0.3787 | 0.0834 | 0.0664 | 0.1498 | 0.0000 | 707.3164 | 707.3164 | 0.0945 | 0.0000 | 709.6787 |
| 2029 | 1.2557 | 0.8500 | 1.1273 | 2.6900e-003 | 0.0881 | 0.0301 | 0.1182 | 0.0238 | 0.0281 | 0.0519 | 0.0000 | 240.6040 | 240.6040 | 0.0412 | 0.0000 | 241.6340 |
| **Maximum** | **1.2557** | **2.8851** | **2.9606** | **7.9600e-003** | **0.7893** | **0.1012** | **0.8905** | **0.3360** | **0.0940** | **0.4300** | **0.0000** | **716.1040** | **716.1040** | **0.1394** | **0.0000** | **718.4795** |

## 2.1 Overall Construction

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2026 | 0.3203 | 2.8851 | 2.9606 | 7.7600e-003 | 0.4614 | 0.1012 | 0.5626 | 0.1799 | 0.0940 | 0.2739 | 0.0000 | 692.4330 | 692.4330 | 0.1394 | 0.0000 | 695.9168 |
| 2027 | 0.2815 | 2.4246 | 2.7730 | 7.9600e-003 | 0.3093 | 0.0710 | 0.3803 | 0.0837 | 0.0667 | 0.1504 | 0.0000 | 716.1036 | 716.1036 | 0.0950 | 0.0000 | 718.4792 |
| 2028 | 0.2750 | 2.4047 | 2.7228 | 7.8600e-003 | 0.3081 | 0.0706 | 0.3787 | 0.0834 | 0.0664 | 0.1498 | 0.0000 | 707.3161 | 707.3161 | 0.0945 | 0.0000 | 709.6783 |
| 2029 | 1.2557 | 0.8500 | 1.1273 | 2.6900e-003 | 0.0881 | 0.0301 | 0.1182 | 0.0238 | 0.0281 | 0.0519 | 0.0000 | 240.6038 | 240.6038 | 0.0412 | 0.0000 | 241.6339 |
| **Maximum** | **1.2557** | **2.8851** | **2.9606** | **7.9600e-003** | **0.4614** | **0.1012** | **0.5626** | **0.1799** | **0.0940** | **0.2739** | **0.0000** | **716.1036** | **716.1036** | **0.1394** | **0.0000** | **718.4792** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **21.94** | **0.00** | **18.55** | **29.63** | **0.00** | **19.96** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| **1** | **1-1-2026** | **3-31-2026** | 0.9475 | 0.9475 |
| **2** | **4-1-2026** | **6-30-2026** | 0.8834 | 0.8834 |
| **3** | **7-1-2026** | **9-30-2026** | 0.6861 | 0.6861 |
| **4** | **10-1-2026** | **12-31-2026** | 0.6884 | 0.6884 |
| **5** | **1-1-2027** | **3-31-2027** | 0.6687 | 0.6687 |
| **6** | **4-1-2027** | **6-30-2027** | 0.6740 | 0.6740 |
| **7** | **7-1-2027** | **9-30-2027** | 0.6814 | 0.6814 |
| **8** | **10-1-2027** | **12-31-2027** | 0.6836 | 0.6836 |

| | | | | |
|---|---|---|---|---|
| **9** | **1-1-2028** | **3-31-2028** | 0.6720 | 0.6720 |
| **10** | **4-1-2028** | **6-30-2028** | 0.6699 | 0.6699 |
| **11** | **7-1-2028** | **9-30-2028** | 0.6773 | 0.6773 |
| **12** | **10-1-2028** | **12-31-2028** | 0.6794 | 0.6794 |
| **13** | **1-1-2029** | **3-31-2029** | 0.6487 | 0.6487 |
| **14** | **4-1-2029** | **6-30-2029** | 0.5170 | 0.5170 |
| **15** | **7-1-2029** | **9-30-2029** | 0.9333 | 0.9333 |
| | | **Highest** | 0.9475 | 0.9475 |

## 2.2 Overall Operational

**Unmitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 2.0105 | 0.1931 | 8.0478 | 0.0222 | | 1.0985 | 1.0985 | | 1.0985 | 1.0985 | 145.3359 | 81.9420 | 227.2779 | 0.6831 | 1.4600e-003 | 244.7904 |
| Energy | 0.0221 | 0.1890 | 0.0804 | 1.2100e-003 | | 0.0153 | 0.0153 | | 0.0153 | 0.0153 | 0.0000 | 399.2618 | 399.2618 | 0.0179 | 7.1200e-003 | 401.8314 |
| Mobile | 0.3902 | 1.3203 | 4.6810 | 0.0158 | 1.7339 | 0.0129 | 1.7467 | 0.4632 | 0.0119 | 0.4751 | 0.0000 | 1,454.4935 | 1,454.4935 | 0.0716 | 0.0000 | 1,456.2822 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 31.8087 | 0.0000 | 31.8087 | 1.8798 | 0.0000 | 78.8047 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 3.8034 | 16.3462 | 20.1495 | 0.3919 | 9.5100e-003 | 32.7792 |
| **Total** | **2.4229** | **1.7024** | **12.8092** | **0.0393** | **1.7339** | **1.1267** | **2.8606** | **0.4632** | **1.1258** | **1.5890** | **180.9479** | **1,952.0435** | **2,132.9914** | **3.0442** | **0.0181** | **2,214.4879** |

## 2.2 Overall Operational

**Mitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 1.2779 | 0.0846 | 1.3943 | 5.1000e-004 | | 0.0131 | 0.0131 | | 0.0131 | 0.0131 | 0.0000 | 81.9420 | 81.9420 | 3.6700e-003 | 1.4600e-003 | 82.4691 |
| Energy | 0.0208 | 0.1780 | 0.0758 | 1.1400e-003 | | 0.0144 | 0.0144 | | 0.0144 | 0.0144 | 0.0000 | 384.9736 | 384.9736 | 0.0175 | 6.8600e-003 | 387.4565 |
| Mobile | 0.3823 | 1.2730 | 4.4262 | 0.0148 | 1.6142 | 0.0121 | 1.6263 | 0.4312 | 0.0112 | 0.4425 | 0.0000 | 1,361.1967 | 1,361.1967 | 0.0685 | 0.0000 | 1,362.9089 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 23.8565 | 0.0000 | 23.8565 | 1.4099 | 0.0000 | 59.1035 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 3.0427 | 13.0769 | 16.1196 | 0.3135 | 7.6000e-003 | 26.2234 |
| **Total** | **1.6810** | **1.5356** | **5.8962** | **0.0165** | **1.6142** | **0.0396** | **1.6539** | **0.4312** | **0.0387** | **0.4700** | **26.8992** | **1,841.1892** | **1,868.0884** | **1.8131** | **0.0159** | **1,918.1614** |

| | **ROG** | **NOx** | **CO** | **SO2** | **Fugitive PM10** | **Exhaust PM10** | **PM10 Total** | **Fugitive PM2.5** | **Exhaust PM2.5** | **PM2.5 Total** | **Bio- CO2** | **NBio-CO2** | **Total CO2** | **CH4** | **N20** | **CO2e** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **30.62** | **9.80** | **53.97** | **58.05** | **6.90** | **96.48** | **42.18** | **6.90** | **96.56** | **70.42** | **85.13** | **5.68** | **12.42** | **40.44** | **12.00** | **13.38** |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 1/1/2026 | 2/11/2026 | 5 | 30 | |
| 2 | Grading | Grading | 2/12/2026 | 5/27/2026 | 5 | 75 | |
| 3 | Building Construction | Building Construction | 5/28/2026 | 3/28/2029 | 5 | 740 | |
| 4 | Paving | Paving | 3/29/2029 | 6/13/2029 | 5 | 55 | |
| 5 | Architectural Coating | Architectural Coating | 6/14/2029 | 8/29/2029 | 5 | 55 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 187.5**

**Acres of Paving: 0**

**Residential Indoor: 575,100; Residential Outdoor: 191,700; Non-Residential Indoor: 300; Non-Residential Outdoor: 100; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 232.00 | 76.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 46.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

## 3.2 Site Preparation - 2026

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.2710 | 0.0000 | 0.2710 | 0.1490 | 0.0000 | 0.1490 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0371 | 0.3785 | 0.2687 | 5.7000e-004 | | 0.0163 | 0.0163 | | 0.0150 | 0.0150 | 0.0000 | 50.2005 | 50.2005 | 0.0162 | 0.0000 | 50.6064 |
| **Total** | **0.0371** | **0.3785** | **0.2687** | **5.7000e-004** | **0.2710** | **0.0163** | **0.2873** | **0.1490** | **0.0150** | **0.1640** | **0.0000** | **50.2005** | **50.2005** | **0.0162** | **0.0000** | **50.6064** |

## 3.2 Site Preparation - 2026

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 7.8000e-004 | 4.9000e-004 | 5.1600e-003 | 2.0000e-005 | 2.1700e-003 | 1.0000e-005 | 2.1800e-003 | 5.8000e-004 | 1.0000e-005 | 5.9000e-004 | 0.0000 | 1.4901 | 1.4901 | 4.0000e-005 | 0.0000 | 1.4910 |
| **Total** | **7.8000e-004** | **4.9000e-004** | **5.1600e-003** | **2.0000e-005** | **2.1700e-003** | **1.0000e-005** | **2.1800e-003** | **5.8000e-004** | **1.0000e-005** | **5.9000e-004** | **0.0000** | **1.4901** | **1.4901** | **4.0000e-005** | **0.0000** | **1.4910** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.1220 | 0.0000 | 0.1220 | 0.0670 | 0.0000 | 0.0670 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0371 | 0.3785 | 0.2687 | 5.7000e-004 | | 0.0163 | 0.0163 | | 0.0150 | 0.0150 | 0.0000 | 50.2004 | 50.2004 | 0.0162 | 0.0000 | 50.6063 |
| **Total** | **0.0371** | **0.3785** | **0.2687** | **5.7000e-004** | **0.1220** | **0.0163** | **0.1383** | **0.0670** | **0.0150** | **0.0820** | **0.0000** | **50.2004** | **50.2004** | **0.0162** | **0.0000** | **50.6063** |

## 3.2 Site Preparation - 2026

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 7.8000e-004 | 4.9000e-004 | 5.1600e-003 | 2.0000e-005 | 2.1700e-003 | 1.0000e-005 | 2.1800e-003 | 5.8000e-004 | 1.0000e-005 | 5.9000e-004 | 0.0000 | 1.4901 | 1.4901 | 4.0000e-005 | 0.0000 | 1.4910 |
| **Total** | **7.8000e-004** | **4.9000e-004** | **5.1600e-003** | **2.0000e-005** | **2.1700e-003** | **1.0000e-005** | **2.1800e-003** | **5.8000e-004** | **1.0000e-005** | **5.9000e-004** | **0.0000** | **1.4901** | **1.4901** | **4.0000e-005** | **0.0000** | **1.4910** |

## 3.3 Grading - 2026

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.3253 | 0.0000 | 0.3253 | 0.1349 | 0.0000 | 0.1349 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.1088 | 1.0479 | 0.9874 | 2.3300e-003 | | 0.0424 | 0.0424 | | 0.0390 | 0.0390 | 0.0000 | 204.3983 | 204.3983 | 0.0661 | 0.0000 | 206.0510 |
| **Total** | **0.1088** | **1.0479** | **0.9874** | **2.3300e-003** | **0.3253** | **0.0424** | **0.3677** | **0.1349** | **0.0390** | **0.1739** | **0.0000** | **204.3983** | **204.3983** | **0.0661** | **0.0000** | **206.0510** |

## 3.3 Grading - 2026

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.1800e-003 | 1.3600e-003 | 0.0143 | 5.0000e-005 | 6.0300e-003 | 4.0000e-005 | 6.0600e-003 | 1.6000e-003 | 3.0000e-005 | 1.6300e-003 | 0.0000 | 4.1392 | 4.1392 | 1.0000e-004 | 0.0000 | 4.1417 |
| **Total** | **2.1800e-003** | **1.3600e-003** | **0.0143** | **5.0000e-005** | **6.0300e-003** | **4.0000e-005** | **6.0600e-003** | **1.6000e-003** | **3.0000e-005** | **1.6300e-003** | **0.0000** | **4.1392** | **4.1392** | **1.0000e-004** | **0.0000** | **4.1417** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.1464 | 0.0000 | 0.1464 | 0.0607 | 0.0000 | 0.0607 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.1088 | 1.0479 | 0.9874 | 2.3300e-003 | | 0.0424 | 0.0424 | | 0.0390 | 0.0390 | 0.0000 | 204.3981 | 204.3981 | 0.0661 | 0.0000 | 206.0507 |
| **Total** | **0.1088** | **1.0479** | **0.9874** | **2.3300e-003** | **0.1464** | **0.0424** | **0.1888** | **0.0607** | **0.0390** | **0.0997** | **0.0000** | **204.3981** | **204.3981** | **0.0661** | **0.0000** | **206.0507** |

## 3.3 Grading - 2026

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.1800e-003 | 1.3600e-003 | 0.0143 | 5.0000e-005 | 6.0300e-003 | 4.0000e-005 | 6.0600e-003 | 1.6000e-003 | 3.0000e-005 | 1.6300e-003 | 0.0000 | 4.1392 | 4.1392 | 1.0000e-004 | 0.0000 | 4.1417 |
| **Total** | **2.1800e-003** | **1.3600e-003** | **0.0143** | **5.0000e-005** | **6.0300e-003** | **4.0000e-005** | **6.0600e-003** | **1.6000e-003** | **3.0000e-005** | **1.6300e-003** | **0.0000** | **4.1392** | **4.1392** | **1.0000e-004** | **0.0000** | **4.1417** |

## 3.4 Building Construction - 2026

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1067 | 0.9726 | 1.2546 | 2.1000e-003 | | 0.0412 | 0.0412 | | 0.0387 | 0.0387 | 0.0000 | 180.8972 | 180.8972 | 0.0425 | 0.0000 | 181.9603 |
| **Total** | **0.1067** | **0.9726** | **1.2546** | **2.1000e-003** | | **0.0412** | **0.0412** | | **0.0387** | **0.0387** | **0.0000** | **180.8972** | **180.8972** | **0.0425** | **0.0000** | **181.9603** |

## 3.4 Building Construction - 2026

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0122 | 0.4514 | 0.0849 | 1.6000e-003 | 0.0395 | 4.6000e-004 | 0.0399 | 0.0114 | 4.4000e-004 | 0.0118 | 0.0000 | 151.4371 | 151.4371 | 0.0120 | 0.0000 | 151.7368 |
| Worker | 0.0526 | 0.0329 | 0.3455 | 1.1000e-003 | 0.1454 | 8.6000e-004 | 0.1462 | 0.0386 | 7.9000e-004 | 0.0394 | 0.0000 | 99.8712 | 99.8712 | 2.3700e-003 | 0.0000 | 99.9303 |
| **Total** | **0.0648** | **0.4843** | **0.4304** | **2.7000e-003** | **0.1849** | **1.3200e-003** | **0.1862** | **0.0500** | **1.2300e-003** | **0.0513** | **0.0000** | **251.3083** | **251.3083** | **0.0144** | **0.0000** | **251.6671** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1067 | 0.9726 | 1.2546 | 2.1000e-003 | | 0.0412 | 0.0412 | | 0.0387 | 0.0387 | 0.0000 | 180.8970 | 180.8970 | 0.0425 | 0.0000 | 181.9600 |
| **Total** | **0.1067** | **0.9726** | **1.2546** | **2.1000e-003** | | **0.0412** | **0.0412** | | **0.0387** | **0.0387** | **0.0000** | **180.8970** | **180.8970** | **0.0425** | **0.0000** | **181.9600** |

## 3.4 Building Construction - 2026

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0122 | 0.4514 | 0.0849 | 1.6000e-003 | 0.0395 | 4.6000e-004 | 0.0399 | 0.0114 | 4.4000e-004 | 0.0118 | 0.0000 | 151.4371 | 151.4371 | 0.0120 | 0.0000 | 151.7368 |
| Worker | 0.0526 | 0.0329 | 0.3455 | 1.1000e-003 | 0.1454 | 8.6000e-004 | 0.1462 | 0.0386 | 7.9000e-004 | 0.0394 | 0.0000 | 99.8712 | 99.8712 | 2.3700e-003 | 0.0000 | 99.9303 |
| **Total** | **0.0648** | **0.4843** | **0.4304** | **2.7000e-003** | **0.1849** | **1.3200e-003** | **0.1862** | **0.0500** | **1.2300e-003** | **0.0513** | **0.0000** | **251.3083** | **251.3083** | **0.0144** | **0.0000** | **251.6671** |

## 3.4 Building Construction - 2027

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1785 | 1.6273 | 2.0991 | 3.5200e-003 | | 0.0689 | 0.0689 | | 0.0648 | 0.0648 | 0.0000 | 302.6549 | 302.6549 | 0.0711 | 0.0000 | 304.4335 |
| **Total** | **0.1785** | **1.6273** | **2.0991** | **3.5200e-003** | | **0.0689** | **0.0689** | | **0.0648** | **0.0648** | **0.0000** | **302.6549** | **302.6549** | **0.0711** | **0.0000** | **304.4335** |

## 3.4 Building Construction - 2027

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0200 | 0.7472 | 0.1369 | 2.6600e-003 | 0.0661 | 7.6000e-004 | 0.0668 | 0.0191 | 7.2000e-004 | 0.0198 | 0.0000 | 251.9087 | 251.9087 | 0.0203 | 0.0000 | 252.4161 |
| Worker | 0.0830 | 0.0502 | 0.5370 | 1.7900e-003 | 0.2432 | 1.3600e-003 | 0.2446 | 0.0646 | 1.2500e-003 | 0.0659 | 0.0000 | 161.5404 | 161.5404 | 3.5800e-003 | 0.0000 | 161.6299 |
| **Total** | **0.1030** | **0.7973** | **0.6740** | **4.4500e-003** | **0.3093** | **2.1200e-003** | **0.3114** | **0.0837** | **1.9700e-003** | **0.0857** | **0.0000** | **413.4491** | **413.4491** | **0.0239** | **0.0000** | **414.0460** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1784 | 1.6273 | 2.0991 | 3.5200e-003 | | 0.0689 | 0.0689 | | 0.0648 | 0.0648 | 0.0000 | 302.6545 | 302.6545 | 0.0711 | 0.0000 | 304.4331 |
| **Total** | **0.1784** | **1.6273** | **2.0991** | **3.5200e-003** | | **0.0689** | **0.0689** | | **0.0648** | **0.0648** | **0.0000** | **302.6545** | **302.6545** | **0.0711** | **0.0000** | **304.4331** |

## 3.4 Building Construction - 2027

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0200 | 0.7472 | 0.1369 | 2.6600e-003 | 0.0661 | 7.6000e-004 | 0.0668 | 0.0191 | 7.2000e-004 | 0.0198 | 0.0000 | 251.9087 | 251.9087 | 0.0203 | 0.0000 | 252.4161 |
| Worker | 0.0830 | 0.0502 | 0.5370 | 1.7900e-003 | 0.2432 | 1.3600e-003 | 0.2446 | 0.0646 | 1.2500e-003 | 0.0659 | 0.0000 | 161.5404 | 161.5404 | 3.5800e-003 | 0.0000 | 161.6299 |
| **Total** | **0.1030** | **0.7973** | **0.6740** | **4.4500e-003** | **0.3093** | **2.1200e-003** | **0.3114** | **0.0837** | **1.9700e-003** | **0.0857** | **0.0000** | **413.4491** | **413.4491** | **0.0239** | **0.0000** | **414.0460** |

## 3.4 Building Construction - 2028

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1778 | 1.6211 | 2.0910 | 3.5000e-003 | | 0.0686 | 0.0686 | | 0.0645 | 0.0645 | 0.0000 | 301.4953 | 301.4953 | 0.0709 | 0.0000 | 303.2671 |
| **Total** | **0.1778** | **1.6211** | **2.0910** | **3.5000e-003** | | **0.0686** | **0.0686** | | **0.0645** | **0.0645** | **0.0000** | **301.4953** | **301.4953** | **0.0709** | **0.0000** | **303.2671** |

## 3.4 Building Construction - 2028

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0197 | 0.7380 | 0.1327 | 2.6300e-003 | 0.0658 | 7.5000e-004 | 0.0666 | 0.0190 | 7.1000e-004 | 0.0197 | 0.0000 | 249.8008 | 249.8008 | 0.0204 | 0.0000 | 250.3102 |
| Worker | 0.0776 | 0.0457 | 0.4991 | 1.7200e-003 | 0.2423 | 1.2600e-003 | 0.2436 | 0.0644 | 1.1600e-003 | 0.0655 | 0.0000 | 156.0203 | 156.0203 | 3.2400e-003 | 0.0000 | 156.1014 |
| **Total** | **0.0972** | **0.7836** | **0.6318** | **4.3500e-003** | **0.3081** | **2.0100e-003** | **0.3101** | **0.0834** | **1.8700e-003** | **0.0853** | **0.0000** | **405.8211** | **405.8211** | **0.0236** | **0.0000** | **406.4116** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1778 | 1.6211 | 2.0910 | 3.5000e-003 | | 0.0686 | 0.0686 | | 0.0645 | 0.0645 | 0.0000 | 301.4949 | 301.4949 | 0.0709 | 0.0000 | 303.2667 |
| **Total** | **0.1778** | **1.6211** | **2.0910** | **3.5000e-003** | | **0.0686** | **0.0686** | | **0.0645** | **0.0645** | **0.0000** | **301.4949** | **301.4949** | **0.0709** | **0.0000** | **303.2667** |

## 3.4 Building Construction - 2028

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0197 | 0.7380 | 0.1327 | 2.6300e-003 | 0.0658 | 7.5000e-004 | 0.0666 | 0.0190 | 7.1000e-004 | 0.0197 | 0.0000 | 249.8008 | 249.8008 | 0.0204 | 0.0000 | 250.3102 |
| Worker | 0.0776 | 0.0457 | 0.4991 | 1.7200e-003 | 0.2423 | 1.2600e-003 | 0.2436 | 0.0644 | 1.1600e-003 | 0.0655 | 0.0000 | 156.0203 | 156.0203 | 3.2400e-003 | 0.0000 | 156.1014 |
| **Total** | **0.0972** | **0.7836** | **0.6318** | **4.3500e-003** | **0.3081** | **2.0100e-003** | **0.3101** | **0.0834** | **1.8700e-003** | **0.0853** | **0.0000** | **405.8211** | **405.8211** | **0.0236** | **0.0000** | **406.4116** |

## 3.4 Building Construction - 2029

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0431 | 0.3928 | 0.5067 | 8.5000e-004 | | 0.0166 | 0.0166 | | 0.0156 | 0.0156 | 0.0000 | 73.0546 | 73.0546 | 0.0172 | 0.0000 | 73.4840 |
| **Total** | **0.0431** | **0.3928** | **0.5067** | **8.5000e-004** | | **0.0166** | **0.0166** | | **0.0156** | **0.0156** | **0.0000** | **73.0546** | **73.0546** | **0.0172** | **0.0000** | **73.4840** |

## 3.4 Building Construction - 2029

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 4.7000e-003 | 0.1773 | 0.0314 | 6.4000e-004 | 0.0159 | 1.8000e-004 | 0.0161 | 4.6000e-003 | 1.7000e-004 | 4.7800e-003 | 0.0000 | 60.2857 | 60.2857 | 4.9700e-003 | 0.0000 | 60.4099 |
| Worker | 0.0175 | 0.0101 | 0.1127 | 4.1000e-004 | 0.0587 | 2.8000e-004 | 0.0590 | 0.0156 | 2.6000e-004 | 0.0159 | 0.0000 | 36.7529 | 36.7529 | 7.1000e-004 | 0.0000 | 36.7707 |
| **Total** | **0.0222** | **0.1874** | **0.1441** | **1.0500e-003** | **0.0747** | **4.6000e-004** | **0.0751** | **0.0202** | **4.3000e-004** | **0.0206** | **0.0000** | **97.0386** | **97.0386** | **5.6800e-003** | **0.0000** | **97.1805** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0431 | 0.3928 | 0.5067 | 8.5000e-004 | | 0.0166 | 0.0166 | | 0.0156 | 0.0156 | 0.0000 | 73.0545 | 73.0545 | 0.0172 | 0.0000 | 73.4839 |
| **Total** | **0.0431** | **0.3928** | **0.5067** | **8.5000e-004** | | **0.0166** | **0.0166** | | **0.0156** | **0.0156** | **0.0000** | **73.0545** | **73.0545** | **0.0172** | **0.0000** | **73.4839** |

## 3.4 Building Construction - 2029

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 4.7000e-003 | 0.1773 | 0.0314 | 6.4000e-004 | 0.0159 | 1.8000e-004 | 0.0161 | 4.6000e-003 | 1.7000e-004 | 4.7800e-003 | 0.0000 | 60.2857 | 60.2857 | 4.9700e-003 | 0.0000 | 60.4099 |
| Worker | 0.0175 | 0.0101 | 0.1127 | 4.1000e-004 | 0.0587 | 2.8000e-004 | 0.0590 | 0.0156 | 2.6000e-004 | 0.0159 | 0.0000 | 36.7529 | 36.7529 | 7.1000e-004 | 0.0000 | 36.7707 |
| **Total** | **0.0222** | **0.1874** | **0.1441** | **1.0500e-003** | **0.0747** | **4.6000e-004** | **0.0751** | **0.0202** | **4.3000e-004** | **0.0206** | **0.0000** | **97.0386** | **97.0386** | **5.6800e-003** | **0.0000** | **97.1805** |

## 3.5 Paving - 2029

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0252 | 0.2360 | 0.4009 | 6.3000e-004 | | 0.0115 | 0.0115 | | 0.0106 | 0.0106 | 0.0000 | 55.0530 | 55.0530 | 0.0178 | 0.0000 | 55.4981 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0252** | **0.2360** | **0.4009** | **6.3000e-004** | | **0.0115** | **0.0115** | | **0.0106** | **0.0106** | **0.0000** | **55.0530** | **55.0530** | **0.0178** | **0.0000** | **55.4981** |

### 3.5 Paving - 2029

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 9.9000e-004 | 5.7000e-004 | 6.3600e-003 | 2.0000e-005 | 3.3100e-003 | 2.0000e-005 | 3.3300e-003 | 8.8000e-004 | 1.0000e-005 | 9.0000e-004 | 0.0000 | 2.0745 | 2.0745 | 4.0000e-005 | 0.0000 | 2.0755 |
| **Total** | **9.9000e-004** | **5.7000e-004** | **6.3600e-003** | **2.0000e-005** | **3.3100e-003** | **2.0000e-005** | **3.3300e-003** | **8.8000e-004** | **1.0000e-005** | **9.0000e-004** | **0.0000** | **2.0745** | **2.0745** | **4.0000e-005** | **0.0000** | **2.0755** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0252 | 0.2360 | 0.4009 | 6.3000e-004 | | 0.0115 | 0.0115 | | 0.0106 | 0.0106 | 0.0000 | 55.0529 | 55.0529 | 0.0178 | 0.0000 | 55.4980 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0252** | **0.2360** | **0.4009** | **6.3000e-004** | | **0.0115** | **0.0115** | | **0.0106** | **0.0106** | **0.0000** | **55.0529** | **55.0529** | **0.0178** | **0.0000** | **55.4980** |

## 3.5 Paving - 2029

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 9.9000e-004 | 5.7000e-004 | 6.3600e-003 | 2.0000e-005 | 3.3100e-003 | 2.0000e-005 | 3.3300e-003 | 8.8000e-004 | 1.0000e-005 | 9.0000e-004 | 0.0000 | 2.0745 | 2.0745 | 4.0000e-005 | 0.0000 | 2.0755 |
| **Total** | **9.9000e-004** | **5.7000e-004** | **6.3600e-003** | **2.0000e-005** | **3.3100e-003** | **2.0000e-005** | **3.3300e-003** | **8.8000e-004** | **1.0000e-005** | **9.0000e-004** | **0.0000** | **2.0745** | **2.0745** | **4.0000e-005** | **0.0000** | **2.0755** |

## 3.6 Architectural Coating - 2029

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.1565 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 4.7000e-003 | 0.0315 | 0.0498 | 8.0000e-005 | | 1.4200e-003 | 1.4200e-003 | | 1.4200e-003 | 1.4200e-003 | 0.0000 | 7.0215 | 7.0215 | 3.8000e-004 | 0.0000 | 7.0310 |
| **Total** | **1.1612** | **0.0315** | **0.0498** | **8.0000e-005** | | **1.4200e-003** | **1.4200e-003** | | **1.4200e-003** | **1.4200e-003** | **0.0000** | **7.0215** | **7.0215** | **3.8000e-004** | **0.0000** | **7.0310** |

## 3.6 Architectural Coating - 2029

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 3.0400e-003 | 1.7500e-003 | 0.0195 | 7.0000e-005 | 0.0102 | 5.0000e-005 | 0.0102 | 2.7000e-003 | 5.0000e-005 | 2.7500e-003 | 0.0000 | 6.3619 | 6.3619 | 1.2000e-004 | 0.0000 | 6.3649 |
| **Total** | **3.0400e-003** | **1.7500e-003** | **0.0195** | **7.0000e-005** | **0.0102** | **5.0000e-005** | **0.0102** | **2.7000e-003** | **5.0000e-005** | **2.7500e-003** | **0.0000** | **6.3619** | **6.3619** | **1.2000e-004** | **0.0000** | **6.3649** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.1565 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 4.7000e-003 | 0.0315 | 0.0498 | 8.0000e-005 | | 1.4200e-003 | 1.4200e-003 | | 1.4200e-003 | 1.4200e-003 | 0.0000 | 7.0214 | 7.0214 | 3.8000e-004 | 0.0000 | 7.0310 |
| **Total** | **1.1612** | **0.0315** | **0.0498** | **8.0000e-005** | | **1.4200e-003** | **1.4200e-003** | | **1.4200e-003** | **1.4200e-003** | **0.0000** | **7.0214** | **7.0214** | **3.8000e-004** | **0.0000** | **7.0310** |

## 3.6 Architectural Coating - 2029

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 3.0400e-003 | 1.7500e-003 | 0.0195 | 7.0000e-005 | 0.0102 | 5.0000e-005 | 0.0102 | 2.7000e-003 | 5.0000e-005 | 2.7500e-003 | 0.0000 | 6.3619 | 6.3619 | 1.2000e-004 | 0.0000 | 6.3649 |
| **Total** | **3.0400e-003** | **1.7500e-003** | **0.0195** | **7.0000e-005** | **0.0102** | **5.0000e-005** | **0.0102** | **2.7000e-003** | **5.0000e-005** | **2.7500e-003** | **0.0000** | **6.3619** | **6.3619** | **1.2000e-004** | **0.0000** | **6.3649** |

# 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.3823 | 1.2730 | 4.4262 | 0.0148 | 1.6142 | 0.0121 | 1.6263 | 0.4312 | 0.0112 | 0.4425 | 0.0000 | 1,361.1967 | 1,361.1967 | 0.0685 | 0.0000 | 1,362.9089 |
| Unmitigated | 0.3902 | 1.3203 | 4.6810 | 0.0158 | 1.7339 | 0.0129 | 1.7467 | 0.4632 | 0.0119 | 0.4751 | 0.0000 | 1,454.4935 | 1,454.4935 | 0.0716 | 0.0000 | 1,456.2822 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Apartments Low Rise | 388.81 | 422.44 | 358.13 | 1,114,077 | 1,037,206 |
| Single Family Housing | 1,190.00 | 1,238.75 | 1077.50 | 3,380,009 | 3,146,789 |
| City Park | 14.93 | 179.73 | 132.25 | 117,913 | 109,777 |
| Total | 1,593.74 | 1,840.92 | 1,567.88 | 4,611,999 | 4,293,771 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Apartments Low Rise | 10.80 | 7.30 | 7.50 | 42.30 | 19.60 | 38.10 | 86 | 11 | 3 |
| Single Family Housing | 10.80 | 7.30 | 7.50 | 42.30 | 19.60 | 38.10 | 86 | 11 | 3 |
| City Park | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 66 | 28 | 6 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Low Rise | 0.521500 | 0.214600 | 0.168100 | 0.056900 | 0.000800 | 0.000900 | 0.007500 | 0.020300 | 0.000000 | 0.004400 | 0.002500 | 0.000200 | 0.002300 |
| Single Family Housing | 0.521500 | 0.214600 | 0.168100 | 0.056900 | 0.000800 | 0.000900 | 0.007500 | 0.020300 | 0.000000 | 0.004400 | 0.002500 | 0.000200 | 0.002300 |
| City Park | 0.521500 | 0.214600 | 0.168100 | 0.056900 | 0.000800 | 0.000900 | 0.007500 | 0.020300 | 0.000000 | 0.004400 | 0.002500 | 0.000200 | 0.002300 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Electricity Mitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 178.8289 | 178.8289 | 0.0136 | 3.0800e-003 | 180.0869 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 180.3525 | 180.3525 | 0.0137 | 3.1100e-003 | 181.6212 |
| NaturalGas Mitigated | 0.0208 | 0.1780 | 0.0758 | 1.1400e-003 | | 0.0144 | 0.0144 | | 0.0144 | 0.0144 | 0.0000 | 206.1446 | 206.1446 | 3.9500e-003 | 3.7800e-003 | 207.3696 |
| NaturalGas Unmitigated | 0.0221 | 0.1890 | 0.0804 | 1.2100e-003 | | 0.0153 | 0.0153 | | 0.0153 | 0.0153 | 0.0000 | 218.9093 | 218.9093 | 4.2000e-003 | 4.0100e-003 | 220.2102 |

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Apartments Low Rise | 834051 | 4.5000e-003 | 0.0384 | 0.0164 | 2.5000e-004 | | 3.1100e-003 | 3.1100e-003 | | 3.1100e-003 | 3.1100e-003 | 0.0000 | 44.5082 | 44.5082 | 8.5000e-004 | 8.2000e-004 | 44.7726 |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 3.26816e+006 | 0.0176 | 0.1506 | 0.0641 | 9.6000e-004 | | 0.0122 | 0.0122 | | 0.0122 | 0.0122 | 0.0000 | 174.4012 | 174.4012 | 3.3400e-003 | 3.2000e-003 | 175.4376 |
| **Total** | | **0.0221** | **0.1890** | **0.0804** | **1.2100e-003** | | **0.0153** | **0.0153** | | **0.0153** | **0.0153** | **0.0000** | **218.9094** | **218.9094** | **4.1900e-003** | **4.0200e-003** | **220.2102** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Apartments Low Rise | 791044 | 4.2700e-003 | 0.0365 | 0.0155 | 2.3000e-004 | | 2.9500e-003 | 2.9500e-003 | | 2.9500e-003 | 2.9500e-003 | 0.0000 | 42.2131 | 42.2131 | 8.1000e-004 | 7.7000e-004 | 42.4640 |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 3.07196e+006 | 0.0166 | 0.1416 | 0.0602 | 9.0000e-004 | | 0.0114 | 0.0114 | | 0.0114 | 0.0114 | 0.0000 | 163.9315 | 163.9315 | 3.1400e-003 | 3.0100e-003 | 164.9057 |
| **Total** | | **0.0208** | **0.1780** | **0.0757** | **1.1300e-003** | | **0.0144** | **0.0144** | | **0.0144** | **0.0144** | **0.0000** | **206.1446** | **206.1446** | **3.9500e-003** | **3.7800e-003** | **207.3696** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Apartments Low Rise | 275974 | 36.3021 | 2.7500e-003 | 6.3000e-004 | 36.5574 |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 1.09509e+006 | 144.0504 | 0.0109 | 2.4800e-003 | 145.0637 |
| **Total** | | **180.3525** | **0.0137** | **3.1100e-003** | **181.6212** |

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Apartments Low Rise | 273106 | 35.9248 | 2.7300e-003 | 6.2000e-004 | 36.1775 |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 1.08638e+006 | 142.9041 | 0.0108 | 2.4600e-003 | 143.9094 |
| **Total** | | **178.8290** | **0.0136** | **3.0800e-003** | **180.0869** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 1.2779 | 0.0846 | 1.3943 | 5.1000e-004 | | 0.0131 | 0.0131 | | 0.0131 | 0.0131 | 0.0000 | 81.9420 | 81.9420 | 3.6700e-003 | 1.4600e-003 | 82.4691 |
| Unmitigated | 2.0105 | 0.1931 | 8.0478 | 0.0222 | | 1.0985 | 1.0985 | | 1.0985 | 1.0985 | 145.3359 | 81.9420 | 227.2779 | 0.6831 | 1.4600e-003 | 244.7904 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.1157 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 1.1132 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 0.7407 | 0.1774 | 6.6828 | 0.0222 | | 1.0910 | 1.0910 | | 1.0910 | 1.0910 | 145.3359 | 79.7102 | 225.0461 | 0.6809 | 1.4600e-003 | 242.5051 |
| Landscaping | 0.0410 | 0.0157 | 1.3650 | 7.0000e-005 | | 7.5700e-003 | 7.5700e-003 | | 7.5700e-003 | 7.5700e-003 | 0.0000 | 2.2318 | 2.2318 | 2.1400e-003 | 0.0000 | 2.2853 |
| **Total** | **2.0105** | **0.1931** | **8.0478** | **0.0222** | | **1.0985** | **1.0985** | | **1.0985** | **1.0985** | **145.3359** | **81.9420** | **227.2779** | **0.6831** | **1.4600e-003** | **244.7904** |

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.1157 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 1.1132 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 8.0500e-003 | 0.0688 | 0.0293 | 4.4000e-004 | | 5.5600e-003 | 5.5600e-003 | | 5.5600e-003 | 5.5600e-003 | 0.0000 | 79.7102 | 79.7102 | 1.5300e-003 | 1.4600e-003 | 80.1838 |
| Landscaping | 0.0410 | 0.0157 | 1.3650 | 7.0000e-005 | | 7.5700e-003 | 7.5700e-003 | | 7.5700e-003 | 7.5700e-003 | 0.0000 | 2.2318 | 2.2318 | 2.1400e-003 | 0.0000 | 2.2853 |
| **Total** | **1.2779** | **0.0846** | **1.3943** | **5.1000e-004** | | **0.0131** | **0.0131** | | **0.0131** | **0.0131** | **0.0000** | **81.9420** | **81.9420** | **3.6700e-003** | **1.4600e-003** | **82.4691** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 16.1196 | 0.3135 | 7.6000e-003 | 26.2234 |
| Unmitigated | 20.1495 | 0.3919 | 9.5100e-003 | 32.7792 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Apartments Low Rise | 3.84409 / 2.42345 | 5.0714 | 0.1256 | 3.0200e-003 | 9.1114 |
| City Park | 0 / 9.4127 | 4.3336 | 3.3000e-004 | 7.0000e-005 | 4.3641 |
| Single Family Housing | 8.14425 / 5.13442 | 10.7445 | 0.2660 | 6.4100e-003 | 19.3038 |
| **Total** | | **20.1495** | **0.3919** | **9.5000e-003** | **32.7792** |

## 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Apartments Low Rise | 3.07527 / 1.93876 | 4.0571 | 0.1004 | 2.4200e-003 | 7.2891 |
| City Park | 0 / 7.53016 | 3.4669 | 2.6000e-004 | 6.0000e-005 | 3.4913 |
| Single Family Housing | 6.5154 / 4.10754 | 8.5956 | 0.2128 | 5.1300e-003 | 15.4430 |
| **Total** | | **16.1196** | **0.3135** | **7.6100e-003** | **26.2234** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 23.8565 | 1.4099 | 0.0000 | 59.1035 |
| Unmitigated | 31.8087 | 1.8798 | 0.0000 | 78.8047 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Apartments Low Rise | 27.14 | 5.5092 | 0.3256 | 0.0000 | 13.6488 |
| City Park | 0.68 | 0.1380 | 8.1600e-003 | 0.0000 | 0.3420 |
| Single Family Housing | 128.88 | 26.1615 | 1.5461 | 0.0000 | 64.8140 |
| **Total** | | **31.8087** | **1.8798** | **0.0000** | **78.8047** |

## 8.2 Waste by Land Use

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Apartments Low Rise | 20.355 | 4.1319 | 0.2442 | 0.0000 | 10.2366 |
| City Park | 0.51 | 0.1035 | 6.1200e-003 | 0.0000 | 0.2565 |
| Single Family Housing | 96.66 | 19.6211 | 1.1596 | 0.0000 | 48.6105 |
| **Total** | | **23.8565** | **1.4099** | **0.0000** | **59.1035** |

# 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

# 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

# CalEEMod Output

# Phase 3 Construction and Operations (Annual)

# Lacey Ranch Master Plan Phase 3 Const and Ops

**Kings County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Single Family Housing | 125.00 | Dwelling Unit | 31.07 | 225,000.00 | 358 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 37 |
| **Climate Zone** | 3 | | | **Operational Year** | 2030 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 290 | **CH4 Intensity (lb/MWhr)** | 0.022 | **N2O Intensity (lb/MWhr)** | 0.005 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E Intensity Factors

Land Use - Project acres

Construction Phase -

Architectural Coating - Rule 4601 Architectural Coatings compliance

Vehicle Trips - ITE 10th Ed Trip Gen SFR 9.44, 9.54, 8.55

Woodstoves - Rule 4901 Residential Woodburning hearths allowed 2 per acre

Area Coating - Rule 4601 Architectural Coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Architectural Coatings

Energy Mitigation - 2019 Title 24

Water Mitigation - CalGreen indoor water savings and MWELO outdoor savings

Waste Mitigation - Calrecycle 75% diversion mandate

Fleet Mix - SJVAPCD Residential Fleet Mix for 2030

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblArchitecturalCoating | EF_Residential_Exterior | 150.00 | 65.00 |
| tblArchitecturalCoating | EF_Residential_Interior | 150.00 | 65.00 |
| tblAreaCoating | Area_EF_Residential_Exterior | 150 | 65 |
| tblAreaCoating | Area_EF_Residential_Interior | 150 | 65 |
| tblFleetMix | HHD | 0.17 | 0.02 |
| tblFleetMix | LDA | 0.53 | 0.51 |
| tblFleetMix | LDT1 | 0.03 | 0.22 |
| tblFleetMix | LDT2 | 0.16 | 0.17 |
| tblFleetMix | LHD1 | 0.01 | 8.0000e-004 |
| tblFleetMix | LHD2 | 3.5380e-003 | 1.0000e-003 |
| tblFleetMix | MCY | 5.0810e-003 | 2.5000e-003 |
| tblFleetMix | MDV | 0.09 | 0.06 |
| tblFleetMix | MH | 4.8100e-004 | 3.0000e-003 |
| tblFleetMix | MHD | 0.01 | 7.4000e-003 |
| tblFleetMix | OBUS | 1.6250e-003 | 0.00 |
| tblFleetMix | SBUS | 8.2500e-004 | 1.2000e-003 |
| tblFleetMix | UBUS | 1.3720e-003 | 4.4000e-003 |
| tblLandUse | LotAcreage | 40.58 | 31.07 |
| tblProjectCharacteristics | CH4IntensityFactor | 0.029 | 0.022 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 290 |
| tblProjectCharacteristics | N2OIntensityFactor | 0.006 | 0.005 |
| tblVehicleTrips | ST_TR | 9.91 | 9.54 |
| tblVehicleTrips | SU_TR | 8.62 | 8.55 |
| tblVehicleTrips | WD_TR | 9.52 | 9.44 |

## 2.0 Emissions Summary

## 2.1 Overall Construction

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2030 | 0.2402 | 1.3258 | 2.3531 | 5.6800e-003 | 0.4248 | 0.0301 | 0.4549 | 0.1934 | 0.0301 | 0.2236 | 0.0000 | 501.5245 | 501.5245 | 0.0214 | 0.0000 | 502.0583 |
| 2031 | 0.1861 | 1.1660 | 2.2083 | 4.8000e-003 | 0.0585 | 0.0197 | 0.0781 | 0.0158 | 0.0196 | 0.0354 | 0.0000 | 413.6418 | 413.6418 | 0.0178 | 0.0000 | 414.0863 |
| 2032 | 0.9729 | 0.3319 | 0.6770 | 1.3500e-003 | 0.0130 | 9.3900e-003 | 0.0224 | 3.5000e-003 | 9.3900e-003 | 0.0129 | 0.0000 | 116.6544 | 116.6544 | 5.1100e-003 | 0.0000 | 116.7822 |
| **Maximum** | **0.9729** | **1.3258** | **2.3531** | **5.6800e-003** | **0.4248** | **0.0301** | **0.4549** | **0.1934** | **0.0301** | **0.2236** | **0.0000** | **501.5245** | **501.5245** | **0.0214** | **0.0000** | **502.0583** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2030 | 0.2402 | 1.3258 | 2.3531 | 5.6800e-003 | 0.2181 | 0.0301 | 0.2482 | 0.0943 | 0.0301 | 0.1244 | 0.0000 | 501.5239 | 501.5239 | 0.0214 | 0.0000 | 502.0577 |
| 2031 | 0.1861 | 1.1660 | 2.2083 | 4.8000e-003 | 0.0585 | 0.0197 | 0.0781 | 0.0158 | 0.0196 | 0.0354 | 0.0000 | 413.6414 | 413.6414 | 0.0178 | 0.0000 | 414.0858 |
| 2032 | 0.9729 | 0.3319 | 0.6770 | 1.3500e-003 | 0.0130 | 9.3900e-003 | 0.0224 | 3.5000e-003 | 9.3900e-003 | 0.0129 | 0.0000 | 116.6542 | 116.6542 | 5.1100e-003 | 0.0000 | 116.7821 |
| **Maximum** | **0.9729** | **1.3258** | **2.3531** | **5.6800e-003** | **0.2181** | **0.0301** | **0.2482** | **0.0943** | **0.0301** | **0.1244** | **0.0000** | **501.5239** | **501.5239** | **0.0214** | **0.0000** | **502.0577** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | 0.00 | 0.00 | 0.00 | 0.00 | 41.65 | 0.00 | 37.21 | 46.60 | 0.00 | 36.46 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| 1 | 1-1-2030 | 3-31-2030 | 0.5427 | 0.5427 |
| 2 | 4-1-2030 | 6-30-2030 | 0.3398 | 0.3398 |
| 3 | 7-1-2030 | 9-30-2030 | 0.3411 | 0.3411 |
| 4 | 10-1-2030 | 12-31-2030 | 0.3414 | 0.3414 |
| 5 | 1-1-2031 | 3-31-2031 | 0.3333 | 0.3333 |
| 6 | 4-1-2031 | 6-30-2031 | 0.3367 | 0.3367 |
| 7 | 7-1-2031 | 9-30-2031 | 0.3404 | 0.3404 |
| 8 | 10-1-2031 | 12-31-2031 | 0.3407 | 0.3407 |
| 9 | 1-1-2032 | 3-31-2032 | 0.3171 | 0.3171 |
| 10 | 4-1-2032 | 6-30-2032 | 0.9909 | 0.9909 |
| | | Highest | 0.9909 | 0.9909 |

## 2.2 Overall Operational

**Unmitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 1.6366 | 0.1512 | 6.6959 | 0.0191 | | 0.9470 | 0.9470 | | 0.9470 | 0.9470 | 125.6074 | 55.6670 | 181.2744 | 0.5897 | 9.9000e-004 | 196.3121 |
| Energy | 0.0176 | 0.1506 | 0.0641 | 9.6000e-004 | | 0.0122 | 0.0122 | | 0.0122 | 0.0122 | 0.0000 | 318.4516 | 318.4516 | 0.0143 | 5.6800e-003 | 320.5013 |
| Mobile | 0.2163 | 0.7774 | 2.6207 | 0.0102 | 1.2570 | 7.2700e-003 | 1.2643 | 0.3363 | 6.7500e-003 | 0.3430 | 0.0000 | 942.6374 | 942.6374 | 0.0428 | 0.0000 | 943.7074 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 26.1615 | 0.0000 | 26.1615 | 1.5461 | 0.0000 | 64.8140 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 2.5838 | 8.1607 | 10.7445 | 0.2660 | 6.4100e-003 | 19.3038 |
| **Total** | **1.8705** | **1.0792** | **9.3807** | **0.0303** | **1.2570** | **0.9664** | **2.2235** | **0.3363** | **0.9659** | **1.3022** | **154.3527** | **1,324.9167** | **1,479.2694** | **2.4588** | **0.0131** | **1,544.6385** |

## 2.2 Overall Operational

**Mitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 1.0034 | 0.0574 | 0.9456 | 3.5000e-004 | | 8.9300e-003 | 8.9300e-003 | | 8.9300e-003 | 8.9300e-003 | 0.0000 | 55.6670 | 55.6670 | 2.4800e-003 | 9.9000e-004 | 56.0249 |
| Energy | 0.0166 | 0.1416 | 0.0602 | 9.0000e-004 | | 0.0114 | 0.0114 | | 0.0114 | 0.0114 | 0.0000 | 306.8356 | 306.8356 | 0.0140 | 5.4700e-003 | 308.8150 |
| Mobile | 0.2119 | 0.7510 | 2.4763 | 9.5800e-003 | 1.1703 | 6.8300e-003 | 1.1771 | 0.3131 | 6.3400e-003 | 0.3194 | 0.0000 | 881.9076 | 881.9076 | 0.0410 | 0.0000 | 882.9333 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 19.6211 | 0.0000 | 19.6211 | 1.1596 | 0.0000 | 48.6105 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 2.0670 | 6.5286 | 8.5956 | 0.2128 | 5.1300e-003 | 15.4430 |
| **Total** | **1.2319** | **0.9500** | **3.4821** | **0.0108** | **1.1703** | **0.0272** | **1.1975** | **0.3131** | **0.0267** | **0.3398** | **21.6882** | **1,250.9389** | **1,272.6270** | **1.4299** | **0.0116** | **1,311.8267** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **34.14** | **11.97** | **62.88** | **64.27** | **6.90** | **97.19** | **46.14** | **6.90** | **97.23** | **73.91** | **85.95** | **5.58** | **13.97** | **41.85** | **11.39** | **15.07** |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 1/1/2030 | 1/28/2030 | 5 | 20 | |
| 2 | Grading | Grading | 1/29/2030 | 4/1/2030 | 5 | 45 | |
| 3 | Building Construction | Building Construction | 4/2/2030 | 3/1/2032 | 5 | 500 | |
| 4 | Paving | Paving | 3/2/2032 | 4/19/2032 | 5 | 35 | |
| 5 | Architectural Coating | Architectural Coating | 4/20/2032 | 6/7/2032 | 5 | 35 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 112.5**

**Acres of Paving: 0**

**Residential Indoor: 455,625; Residential Outdoor: 151,875; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

**<u>OffRoad Equipment</u>**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

## Trips and VMT

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 45.00 | 13.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 9.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

## 3.2 Site Preparation - 2030

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.1807 | 0.0000 | 0.1807 | 0.0993 | 0.0000 | 0.0993 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0244 | 0.1367 | 0.1629 | 4.7000e-004 | | 4.3700e-003 | 4.3700e-003 | | 4.3700e-003 | 4.3700e-003 | 0.0000 | 40.0046 | 40.0046 | 1.9700e-003 | 0.0000 | 40.0540 |
| **Total** | **0.0244** | **0.1367** | **0.1629** | **4.7000e-004** | **0.1807** | **4.3700e-003** | **0.1850** | **0.0993** | **4.3700e-003** | **0.1037** | **0.0000** | **40.0046** | **40.0046** | **1.9700e-003** | **0.0000** | **40.0540** |

## 3.2 Site Preparation - 2030

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 4.0000e-004 | 2.3000e-004 | 2.5900e-003 | 1.0000e-005 | 1.4500e-003 | 1.0000e-005 | 1.4500e-003 | 3.8000e-004 | 1.0000e-005 | 3.9000e-004 | 0.0000 | 0.8823 | 0.8823 | 2.0000e-005 | 0.0000 | 0.8827 |
| **Total** | **4.0000e-004** | **2.3000e-004** | **2.5900e-003** | **1.0000e-005** | **1.4500e-003** | **1.0000e-005** | **1.4500e-003** | **3.8000e-004** | **1.0000e-005** | **3.9000e-004** | **0.0000** | **0.8823** | **0.8823** | **2.0000e-005** | **0.0000** | **0.8827** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0813 | 0.0000 | 0.0813 | 0.0447 | 0.0000 | 0.0447 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0244 | 0.1367 | 0.1629 | 4.7000e-004 | | 4.3700e-003 | 4.3700e-003 | | 4.3700e-003 | 4.3700e-003 | 0.0000 | 40.0046 | 40.0046 | 1.9700e-003 | 0.0000 | 40.0539 |
| **Total** | **0.0244** | **0.1367** | **0.1629** | **4.7000e-004** | **0.0813** | **4.3700e-003** | **0.0857** | **0.0447** | **4.3700e-003** | **0.0491** | **0.0000** | **40.0046** | **40.0046** | **1.9700e-003** | **0.0000** | **40.0539** |

## 3.2 Site Preparation - 2030

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 4.0000e-004 | 2.3000e-004 | 2.5900e-003 | 1.0000e-005 | 1.4500e-003 | 1.0000e-005 | 1.4500e-003 | 3.8000e-004 | 1.0000e-005 | 3.9000e-004 | 0.0000 | 0.8823 | 0.8823 | 2.0000e-005 | 0.0000 | 0.8827 |
| **Total** | **4.0000e-004** | **2.3000e-004** | **2.5900e-003** | **1.0000e-005** | **1.4500e-003** | **1.0000e-005** | **1.4500e-003** | **3.8000e-004** | **1.0000e-005** | **3.9000e-004** | **0.0000** | **0.8823** | **0.8823** | **2.0000e-005** | **0.0000** | **0.8827** |

## 3.3 Grading - 2030

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.1952 | 0.0000 | 0.1952 | 0.0809 | 0.0000 | 0.0809 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0738 | 0.3115 | 0.5180 | 1.5700e-003 | | 0.0110 | 0.0110 | | 0.0110 | 0.0110 | 0.0000 | 147.2315 | 147.2315 | 5.9500e-003 | 0.0000 | 147.3803 |
| **Total** | **0.0738** | **0.3115** | **0.5180** | **1.5700e-003** | **0.1952** | **0.0110** | **0.2061** | **0.0809** | **0.0110** | **0.0919** | **0.0000** | **147.2315** | **147.2315** | **5.9500e-003** | **0.0000** | **147.3803** |

## 3.3 Grading - 2030

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.0000e-003 | 5.6000e-004 | 6.4700e-003 | 2.0000e-005 | 3.6200e-003 | 2.0000e-005 | 3.6300e-003 | 9.6000e-004 | 2.0000e-005 | 9.8000e-004 | 0.0000 | 2.2057 | 2.2057 | 4.0000e-005 | 0.0000 | 2.2066 |
| **Total** | **1.0000e-003** | **5.6000e-004** | **6.4700e-003** | **2.0000e-005** | **3.6200e-003** | **2.0000e-005** | **3.6300e-003** | **9.6000e-004** | **2.0000e-005** | **9.8000e-004** | **0.0000** | **2.2057** | **2.2057** | **4.0000e-005** | **0.0000** | **2.2066** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0878 | 0.0000 | 0.0878 | 0.0364 | 0.0000 | 0.0364 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0738 | 0.3115 | 0.5180 | 1.5700e-003 | | 0.0110 | 0.0110 | | 0.0110 | 0.0110 | 0.0000 | 147.2313 | 147.2313 | 5.9500e-003 | 0.0000 | 147.3801 |
| **Total** | **0.0738** | **0.3115** | **0.5180** | **1.5700e-003** | **0.0878** | **0.0110** | **0.0988** | **0.0364** | **0.0110** | **0.0474** | **0.0000** | **147.2313** | **147.2313** | **5.9500e-003** | **0.0000** | **147.3801** |

## 3.3 Grading - 2030

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.0000e-003 | 5.6000e-004 | 6.4700e-003 | 2.0000e-005 | 3.6200e-003 | 2.0000e-005 | 3.6300e-003 | 9.6000e-004 | 2.0000e-005 | 9.8000e-004 | 0.0000 | 2.2057 | 2.2057 | 4.0000e-005 | 0.0000 | 2.2066 |
| **Total** | **1.0000e-003** | **5.6000e-004** | **6.4700e-003** | **2.0000e-005** | **3.6200e-003** | **2.0000e-005** | **3.6300e-003** | **9.6000e-004** | **2.0000e-005** | **9.8000e-004** | **0.0000** | **2.2057** | **2.2057** | **4.0000e-005** | **0.0000** | **2.2066** |

## 3.4 Building Construction - 2030

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1283 | 0.7776 | 1.5834 | 3.0300e-003 | | 0.0145 | 0.0145 | | 0.0145 | 0.0145 | 0.0000 | 257.6038 | 257.6038 | 0.0103 | 0.0000 | 257.8622 |
| **Total** | **0.1283** | **0.7776** | **1.5834** | **3.0300e-003** | | **0.0145** | **0.0145** | | **0.0145** | **0.0145** | **0.0000** | **257.6038** | **257.6038** | **0.0103** | **0.0000** | **257.8622** |

## 3.4 Building Construction - 2030

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 2.4700e-003 | 0.0937 | 0.0164 | 3.4000e-004 | 8.4800e-003 | 9.0000e-005 | 8.5800e-003 | 2.4500e-003 | 9.0000e-005 | 2.5400e-003 | 0.0000 | 31.9813 | 31.9813 | 2.6500e-003 | 0.0000 | 32.0475 |
| Worker | 9.8000e-003 | 5.5300e-003 | 0.0634 | 2.4000e-004 | 0.0354 | 1.6000e-004 | 0.0356 | 9.4100e-003 | 1.5000e-004 | 9.5600e-003 | 0.0000 | 21.6154 | 21.6154 | 3.9000e-004 | 0.0000 | 21.6251 |
| **Total** | **0.0123** | **0.0992** | **0.0797** | **5.8000e-004** | **0.0439** | **2.5000e-004** | **0.0442** | **0.0119** | **2.4000e-004** | **0.0121** | **0.0000** | **53.5967** | **53.5967** | **3.0400e-003** | **0.0000** | **53.6726** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1283 | 0.7776 | 1.5834 | 3.0300e-003 | | 0.0145 | 0.0145 | | 0.0145 | 0.0145 | 0.0000 | 257.6035 | 257.6035 | 0.0103 | 0.0000 | 257.8619 |
| **Total** | **0.1283** | **0.7776** | **1.5834** | **3.0300e-003** | | **0.0145** | **0.0145** | | **0.0145** | **0.0145** | **0.0000** | **257.6035** | **257.6035** | **0.0103** | **0.0000** | **257.8619** |

## 3.4 Building Construction - 2030

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 2.4700e-003 | 0.0937 | 0.0164 | 3.4000e-004 | 8.4800e-003 | 9.0000e-005 | 8.5800e-003 | 2.4500e-003 | 9.0000e-005 | 2.5400e-003 | 0.0000 | 31.9813 | 31.9813 | 2.6500e-003 | 0.0000 | 32.0475 |
| Worker | 9.8000e-003 | 5.5300e-003 | 0.0634 | 2.4000e-004 | 0.0354 | 1.6000e-004 | 0.0356 | 9.4100e-003 | 1.5000e-004 | 9.5600e-003 | 0.0000 | 21.6154 | 21.6154 | 3.9000e-004 | 0.0000 | 21.6251 |
| **Total** | **0.0123** | **0.0992** | **0.0797** | **5.8000e-004** | **0.0439** | **2.5000e-004** | **0.0442** | **0.0119** | **2.4000e-004** | **0.0121** | **0.0000** | **53.5967** | **53.5967** | **3.0400e-003** | **0.0000** | **53.6726** |

## 3.4 Building Construction - 2031

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1708 | 1.0355 | 2.1085 | 4.0400e-003 | | 0.0193 | 0.0193 | | 0.0193 | 0.0193 | 0.0000 | 343.0336 | 343.0336 | 0.0138 | 0.0000 | 343.3777 |
| **Total** | **0.1708** | **1.0355** | **2.1085** | **4.0400e-003** | | **0.0193** | **0.0193** | | **0.0193** | **0.0193** | **0.0000** | **343.0336** | **343.0336** | **0.0138** | **0.0000** | **343.3777** |

## 3.4 Building Construction - 2031

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 3.2600e-003 | 0.1239 | 0.0214 | 4.5000e-004 | 0.0113 | 1.2000e-004 | 0.0114 | 3.2600e-003 | 1.2000e-004 | 3.3800e-003 | 0.0000 | 42.4868 | 42.4868 | 3.5500e-003 | 0.0000 | 42.5756 |
| Worker | 0.0120 | 6.6500e-003 | 0.0784 | 3.1000e-004 | 0.0472 | 2.0000e-004 | 0.0474 | 0.0125 | 1.8000e-004 | 0.0127 | 0.0000 | 28.1214 | 28.1214 | 4.6000e-004 | 0.0000 | 28.1330 |
| **Total** | **0.0152** | **0.1306** | **0.0998** | **7.6000e-004** | **0.0585** | **3.2000e-004** | **0.0588** | **0.0158** | **3.0000e-004** | **0.0161** | **0.0000** | **70.6082** | **70.6082** | **4.0100e-003** | **0.0000** | **70.7086** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1708 | 1.0355 | 2.1085 | 4.0400e-003 | | 0.0193 | 0.0193 | | 0.0193 | 0.0193 | 0.0000 | 343.0332 | 343.0332 | 0.0138 | 0.0000 | 343.3773 |
| **Total** | **0.1708** | **1.0355** | **2.1085** | **4.0400e-003** | | **0.0193** | **0.0193** | | **0.0193** | **0.0193** | **0.0000** | **343.0332** | **343.0332** | **0.0138** | **0.0000** | **343.3773** |

## 3.4 Building Construction - 2031

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 3.2600e-003 | 0.1239 | 0.0214 | 4.5000e-004 | 0.0113 | 1.2000e-004 | 0.0114 | 3.2600e-003 | 1.2000e-004 | 3.3800e-003 | 0.0000 | 42.4868 | 42.4868 | 3.5500e-003 | 0.0000 | 42.5756 |
| Worker | 0.0120 | 6.6500e-003 | 0.0784 | 3.1000e-004 | 0.0472 | 2.0000e-004 | 0.0474 | 0.0125 | 1.8000e-004 | 0.0127 | 0.0000 | 28.1214 | 28.1214 | 4.6000e-004 | 0.0000 | 28.1330 |
| **Total** | **0.0152** | **0.1306** | **0.0998** | **7.6000e-004** | **0.0585** | **3.2000e-004** | **0.0588** | **0.0158** | **3.0000e-004** | **0.0161** | **0.0000** | **70.6082** | **70.6082** | **4.0100e-003** | **0.0000** | **70.7086** |

## 3.4 Building Construction - 2032

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0282 | 0.1706 | 0.3474 | 6.7000e-004 | | 3.1900e-003 | 3.1900e-003 | | 3.1900e-003 | 3.1900e-003 | 0.0000 | 56.5151 | 56.5151 | 2.2700e-003 | 0.0000 | 56.5718 |
| **Total** | **0.0282** | **0.1706** | **0.3474** | **6.7000e-004** | | **3.1900e-003** | **3.1900e-003** | | **3.1900e-003** | **3.1900e-003** | **0.0000** | **56.5151** | **56.5151** | **2.2700e-003** | **0.0000** | **56.5718** |

## 3.4 Building Construction - 2032

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 5.3000e-004 | 0.0203 | 3.4800e-003 | 7.0000e-005 | 1.8600e-003 | 2.0000e-005 | 1.8800e-003 | 5.4000e-004 | 2.0000e-005 | 5.6000e-004 | 0.0000 | 6.9901 | 6.9901 | 5.9000e-004 | 0.0000 | 7.0048 |
| Worker | 1.8100e-003 | 9.9000e-004 | 0.0121 | 5.0000e-005 | 7.7700e-003 | 3.0000e-005 | 7.8000e-003 | 2.0700e-003 | 3.0000e-005 | 2.0900e-003 | 0.0000 | 4.5372 | 4.5372 | 7.0000e-005 | 0.0000 | 4.5389 |
| **Total** | **2.3400e-003** | **0.0213** | **0.0155** | **1.2000e-004** | **9.6300e-003** | **5.0000e-005** | **9.6800e-003** | **2.6100e-003** | **5.0000e-005** | **2.6500e-003** | **0.0000** | **11.5273** | **11.5273** | **6.6000e-004** | **0.0000** | **11.5437** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0282 | 0.1706 | 0.3474 | 6.7000e-004 | | 3.1900e-003 | 3.1900e-003 | | 3.1900e-003 | 3.1900e-003 | 0.0000 | 56.5151 | 56.5151 | 2.2700e-003 | 0.0000 | 56.5717 |
| **Total** | **0.0282** | **0.1706** | **0.3474** | **6.7000e-004** | | **3.1900e-003** | **3.1900e-003** | | **3.1900e-003** | **3.1900e-003** | **0.0000** | **56.5151** | **56.5151** | **2.2700e-003** | **0.0000** | **56.5717** |

## 3.4 Building Construction - 2032

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 5.3000e-004 | 0.0203 | 3.4800e-003 | 7.0000e-005 | 1.8600e-003 | 2.0000e-005 | 1.8800e-003 | 5.4000e-004 | 2.0000e-005 | 5.6000e-004 | 0.0000 | 6.9901 | 6.9901 | 5.9000e-004 | 0.0000 | 7.0048 |
| Worker | 1.8100e-003 | 9.9000e-004 | 0.0121 | 5.0000e-005 | 7.7700e-003 | 3.0000e-005 | 7.8000e-003 | 2.0700e-003 | 3.0000e-005 | 2.0900e-003 | 0.0000 | 4.5372 | 4.5372 | 7.0000e-005 | 0.0000 | 4.5389 |
| **Total** | **2.3400e-003** | **0.0213** | **0.0155** | **1.2000e-004** | **9.6300e-003** | **5.0000e-005** | **9.6800e-003** | **2.6100e-003** | **5.0000e-005** | **2.6500e-003** | **0.0000** | **11.5273** | **11.5273** | **6.6000e-004** | **0.0000** | **11.5437** |

## 3.5 Paving - 2032

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0242 | 0.1246 | 0.2774 | 4.9000e-004 | | 5.7900e-003 | 5.7900e-003 | | 5.7900e-003 | 5.7900e-003 | 0.0000 | 42.1742 | 42.1742 | 1.9800e-003 | 0.0000 | 42.2236 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0242** | **0.1246** | **0.2774** | **4.9000e-004** | | **5.7900e-003** | **5.7900e-003** | | **5.7900e-003** | **5.7900e-003** | **0.0000** | **42.1742** | **42.1742** | **1.9800e-003** | **0.0000** | **42.2236** |

## 3.5 Paving - 2032

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 4.9000e-004 | 2.7000e-004 | 3.2700e-003 | 1.0000e-005 | 2.1100e-003 | 1.0000e-005 | 2.1200e-003 | 5.6000e-004 | 1.0000e-005 | 5.7000e-004 | 0.0000 | 1.2310 | 1.2310 | 2.0000e-005 | 0.0000 | 1.2315 |
| **Total** | **4.9000e-004** | **2.7000e-004** | **3.2700e-003** | **1.0000e-005** | **2.1100e-003** | **1.0000e-005** | **2.1200e-003** | **5.6000e-004** | **1.0000e-005** | **5.7000e-004** | **0.0000** | **1.2310** | **1.2310** | **2.0000e-005** | **0.0000** | **1.2315** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0242 | 0.1246 | 0.2774 | 4.9000e-004 | | 5.7900e-003 | 5.7900e-003 | | 5.7900e-003 | 5.7900e-003 | 0.0000 | 42.1741 | 42.1741 | 1.9800e-003 | 0.0000 | 42.2235 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0242** | **0.1246** | **0.2774** | **4.9000e-004** | | **5.7900e-003** | **5.7900e-003** | | **5.7900e-003** | **5.7900e-003** | **0.0000** | **42.1741** | **42.1741** | **1.9800e-003** | **0.0000** | **42.2235** |

## 3.5 Paving - 2032

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 4.9000e-004 | 2.7000e-004 | 3.2700e-003 | 1.0000e-005 | 2.1100e-003 | 1.0000e-005 | 2.1200e-003 | 5.6000e-004 | 1.0000e-005 | 5.7000e-004 | 0.0000 | 1.2310 | 1.2310 | 2.0000e-005 | 0.0000 | 1.2315 |
| **Total** | **4.9000e-004** | **2.7000e-004** | **3.2700e-003** | **1.0000e-005** | **2.1100e-003** | **1.0000e-005** | **2.1200e-003** | **5.6000e-004** | **1.0000e-005** | **5.7000e-004** | **0.0000** | **1.2310** | **1.2310** | **2.0000e-005** | **0.0000** | **1.2315** |

## 3.6 Architectural Coating - 2032

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.9151 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 2.2900e-003 | 0.0150 | 0.0315 | 5.0000e-005 | | 3.6000e-004 | 3.6000e-004 | | 3.6000e-004 | 3.6000e-004 | 0.0000 | 4.4682 | 4.4682 | 1.8000e-004 | 0.0000 | 4.4727 |
| **Total** | **0.9174** | **0.0150** | **0.0315** | **5.0000e-005** | | **3.6000e-004** | **3.6000e-004** | | **3.6000e-004** | **3.6000e-004** | **0.0000** | **4.4682** | **4.4682** | **1.8000e-004** | **0.0000** | **4.4727** |

## 3.6 Architectural Coating - 2032

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.9000e-004 | 1.6000e-004 | 1.9600e-003 | 1.0000e-005 | 1.2700e-003 | 0.0000 | 1.2700e-003 | 3.4000e-004 | 0.0000 | 3.4000e-004 | 0.0000 | 0.7386 | 0.7386 | 1.0000e-005 | 0.0000 | 0.7389 |
| **Total** | **2.9000e-004** | **1.6000e-004** | **1.9600e-003** | **1.0000e-005** | **1.2700e-003** | **0.0000** | **1.2700e-003** | **3.4000e-004** | **0.0000** | **3.4000e-004** | **0.0000** | **0.7386** | **0.7386** | **1.0000e-005** | **0.0000** | **0.7389** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 0.9151 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 2.2900e-003 | 0.0150 | 0.0315 | 5.0000e-005 | | 3.6000e-004 | 3.6000e-004 | | 3.6000e-004 | 3.6000e-004 | 0.0000 | 4.4682 | 4.4682 | 1.8000e-004 | 0.0000 | 4.4727 |
| **Total** | **0.9174** | **0.0150** | **0.0315** | **5.0000e-005** | | **3.6000e-004** | **3.6000e-004** | | **3.6000e-004** | **3.6000e-004** | **0.0000** | **4.4682** | **4.4682** | **1.8000e-004** | **0.0000** | **4.4727** |

## 3.6 Architectural Coating - 2032

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.9000e-004 | 1.6000e-004 | 1.9600e-003 | 1.0000e-005 | 1.2700e-003 | 0.0000 | 1.2700e-003 | 3.4000e-004 | 0.0000 | 3.4000e-004 | 0.0000 | 0.7386 | 0.7386 | 1.0000e-005 | 0.0000 | 0.7389 |
| **Total** | **2.9000e-004** | **1.6000e-004** | **1.9600e-003** | **1.0000e-005** | **1.2700e-003** | **0.0000** | **1.2700e-003** | **3.4000e-004** | **0.0000** | **3.4000e-004** | **0.0000** | **0.7386** | **0.7386** | **1.0000e-005** | **0.0000** | **0.7389** |

# 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.2119 | 0.7510 | 2.4763 | 9.5800e-003 | 1.1703 | 6.8300e-003 | 1.1771 | 0.3131 | 6.3400e-003 | 0.3194 | 0.0000 | 881.9076 | 881.9076 | 0.0410 | 0.0000 | 882.9333 |
| Unmitigated | 0.2163 | 0.7774 | 2.6207 | 0.0102 | 1.2570 | 7.2700e-003 | 1.2643 | 0.3363 | 6.7500e-003 | 0.3430 | 0.0000 | 942.6374 | 942.6374 | 0.0428 | 0.0000 | 943.7074 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Single Family Housing | 1,180.00 | 1,192.50 | 1068.75 | 3,337,076 | 3,106,817 |
| Total | 1,180.00 | 1,192.50 | 1,068.75 | 3,337,076 | 3,106,817 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Single Family Housing | 10.80 | 7.30 | 7.50 | 42.30 | 19.60 | 38.10 | 86 | 11 | 3 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Single Family Housing | 0.511000 | 0.223100 | 0.169000 | 0.059300 | 0.000800 | 0.001000 | 0.007400 | 0.017300 | 0.000000 | 0.004400 | 0.002500 | 0.001200 | 0.003000 |

# 5.0 Energy Detail

Historical Energy Use: N

## 5.1 Mitigation Measures Energy

Exceed Title 24

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Electricity Mitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 142.9041 | 142.9041 | 0.0108 | 2.4600e-003 | 143.9094 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 144.0504 | 144.0504 | 0.0109 | 2.4800e-003 | 145.0637 |
| NaturalGas Mitigated | 0.0166 | 0.1416 | 0.0602 | 9.0000e-004 | | 0.0114 | 0.0114 | | 0.0114 | 0.0114 | 0.0000 | 163.9315 | 163.9315 | 3.1400e-003 | 3.0100e-003 | 164.9057 |
| NaturalGas Unmitigated | 0.0176 | 0.1506 | 0.0641 | 9.6000e-004 | | 0.0122 | 0.0122 | | 0.0122 | 0.0122 | 0.0000 | 174.4012 | 174.4012 | 3.3400e-003 | 3.2000e-003 | 175.4376 |

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Single Family Housing | 3.26816e+006 | 0.0176 | 0.1506 | 0.0641 | 9.6000e-004 | | 0.0122 | 0.0122 | | 0.0122 | 0.0122 | 0.0000 | 174.4012 | 174.4012 | 3.3400e-003 | 3.2000e-003 | 175.4376 |
| **Total** | | **0.0176** | **0.1506** | **0.0641** | **9.6000e-004** | | **0.0122** | **0.0122** | | **0.0122** | **0.0122** | **0.0000** | **174.4012** | **174.4012** | **3.3400e-003** | **3.2000e-003** | **175.4376** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Single Family Housing | 3.07196e+006 | 0.0166 | 0.1416 | 0.0602 | 9.0000e-004 | | 0.0114 | 0.0114 | | 0.0114 | 0.0114 | 0.0000 | 163.9315 | 163.9315 | 3.1400e-003 | 3.0100e-003 | 164.9057 |
| **Total** | | **0.0166** | **0.1416** | **0.0602** | **9.0000e-004** | | **0.0114** | **0.0114** | | **0.0114** | **0.0114** | **0.0000** | **163.9315** | **163.9315** | **3.1400e-003** | **3.0100e-003** | **164.9057** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Single Family Housing | 1.09509e+006 | 144.0504 | 0.0109 | 2.4800e-003 | 145.0637 |
| **Total** | | **144.0504** | **0.0109** | **2.4800e-003** | **145.0637** |

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Single Family Housing | 1.08638e+006 | 142.9041 | 0.0108 | 2.4600e-003 | 143.9094 |
| **Total** | | **142.9041** | **0.0108** | **2.4600e-003** | **143.9094** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 1.0034 | 0.0574 | 0.9456 | 3.5000e-004 | | 8.9300e-003 | 8.9300e-003 | | 8.9300e-003 | 8.9300e-003 | 0.0000 | 55.6670 | 55.6670 | 2.4800e-003 | 9.9000e-004 | 56.0249 |
| Unmitigated | 1.6366 | 0.1512 | 6.6959 | 0.0191 | | 0.9470 | 0.9470 | | 0.9470 | 0.9470 | 125.6074 | 55.6670 | 181.2744 | 0.5897 | 9.9000e-004 | 196.3121 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.0915 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.8787 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 0.6387 | 0.1406 | 5.7702 | 0.0191 | | 0.9419 | 0.9419 | | 0.9419 | 0.9419 | 125.6074 | 54.1509 | 179.7583 | 0.5882 | 9.9000e-004 | 194.7598 |
| Landscaping | 0.0277 | 0.0107 | 0.9257 | 5.0000e-005 | | 5.1500e-003 | 5.1500e-003 | | 5.1500e-003 | 5.1500e-003 | 0.0000 | 1.5161 | 1.5161 | 1.4400e-003 | 0.0000 | 1.5522 |
| **Total** | **1.6366** | **0.1512** | **6.6959** | **0.0191** | | **0.9470** | **0.9470** | | **0.9470** | **0.9470** | **125.6074** | **55.6670** | **181.2744** | **0.5897** | **9.9000e-004** | **196.3121** |

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.0915 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.8787 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 5.4700e-003 | 0.0468 | 0.0199 | 3.0000e-004 | | 3.7800e-003 | 3.7800e-003 | | 3.7800e-003 | 3.7800e-003 | 0.0000 | 54.1509 | 54.1509 | 1.0400e-003 | 9.9000e-004 | 54.4727 |
| Landscaping | 0.0277 | 0.0107 | 0.9257 | 5.0000e-005 | | 5.1500e-003 | 5.1500e-003 | | 5.1500e-003 | 5.1500e-003 | 0.0000 | 1.5161 | 1.5161 | 1.4400e-003 | 0.0000 | 1.5522 |
| **Total** | **1.0034** | **0.0574** | **0.9456** | **3.5000e-004** | | **8.9300e-003** | **8.9300e-003** | | **8.9300e-003** | **8.9300e-003** | **0.0000** | **55.6670** | **55.6670** | **2.4800e-003** | **9.9000e-004** | **56.0249** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 8.5956 | 0.2128 | 5.1300e-003 | 15.4430 |
| Unmitigated | 10.7445 | 0.2660 | 6.4100e-003 | 19.3038 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Single Family Housing | 8.14425 / 5.13442 | 10.7445 | 0.2660 | 6.4100e-003 | 19.3038 |
| **Total** | | **10.7445** | **0.2660** | **6.4100e-003** | **19.3038** |

## 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Single Family Housing | 6.5154 / 4.10754 | 8.5956 | 0.2128 | 5.1300e-003 | 15.4430 |
| **Total** | | **8.5956** | **0.2128** | **5.1300e-003** | **15.4430** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 19.6211 | 1.1596 | 0.0000 | 48.6105 |
| Unmitigated | 26.1615 | 1.5461 | 0.0000 | 64.8140 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Single Family Housing | 128.88 | 26.1615 | 1.5461 | 0.0000 | 64.8140 |
| **Total** | | **26.1615** | **1.5461** | **0.0000** | **64.8140** |

## 8.2 Waste by Land Use

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Single Family Housing | 96.66 | 19.6211 | 1.1596 | 0.0000 | 48.6105 |
| **Total** | | **19.6211** | **1.1596** | **0.0000** | **48.6105** |

# 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

# 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

# 11.0 Vegetation

# CalEEMod Output

# Phase 4 Construction and Operations (Annual)

# Lacey Ranch Master Plan Phase 4 Const and Ops

**Kings County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Single Family Housing | 172.00 | Dwelling Unit | 42.75 | 309,600.00 | 492 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 37 |
| **Climate Zone** | 3 | | | **Operational Year** | 2034 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 290 | **CH4 Intensity (lb/MWhr)** | 0.022 | **N2O Intensity (lb/MWhr)** | 0.005 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E Intensity Factors

Land Use - Project acres

Construction Phase -

Architectural Coating - Rule 4601 Architectural Coatings compliance

Vehicle Trips - ITE 10th Ed Trip Gen SFR 9.44, 9.54, 8.55

Woodstoves - Rule 4901 Residential Woodburning hearths allowed 2 per acre

Area Coating - Rule 4601 Architectural Coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Architectural Coatings

Energy Mitigation - 2019 Title 24

Water Mitigation - CalGreen indoor water savings and MWELO outdoor savings

Waste Mitigation - Calrecycle 75% diversion mandate

Fleet Mix - SJVAPCD Residential Fleet Mix for 2034

Lacey Ranch Master Plan Phase 4 Const and Ops - Kings County, Annual

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblArchitecturalCoating | EF_Residential_Exterior | 150.00 | 65.00 |
| tblArchitecturalCoating | EF_Residential_Interior | 150.00 | 65.00 |
| tblAreaMitigation | UseLowVOCPaintResidentialExteriorValue | 150 | 65 |
| tblAreaMitigation | UseLowVOCPaintResidentialInteriorValue | 150 | 65 |
| tblFleetMix | HHD | 0.16 | 0.02 |
| tblFleetMix | LDA | 0.53 | 0.50 |
| tblFleetMix | LDT1 | 0.03 | 0.23 |
| tblFleetMix | LDT2 | 0.16 | 0.17 |
| tblFleetMix | LHD1 | 9.1920e-003 | 8.0000e-004 |
| tblFleetMix | LHD2 | 3.4050e-003 | 1.0000e-003 |
| tblFleetMix | MCY | 4.9870e-003 | 2.7000e-003 |
| tblFleetMix | MDV | 0.09 | 0.06 |
| tblFleetMix | MH | 4.4200e-004 | 3.6000e-003 |
| tblFleetMix | MHD | 0.01 | 7.6000e-003 |
| tblFleetMix | OBUS | 1.6090e-003 | 0.00 |
| tblFleetMix | SBUS | 7.8600e-004 | 1.2000e-003 |
| tblFleetMix | UBUS | 1.2940e-003 | 4.4000e-003 |
| tblLandUse | LotAcreage | 55.84 | 42.75 |
| tblProjectCharacteristics | CH4IntensityFactor | 0.029 | 0.022 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 290 |
| tblProjectCharacteristics | N2OIntensityFactor | 0.006 | 0.005 |
| tblVehicleTrips | ST_TR | 9.91 | 9.54 |
| tblVehicleTrips | SU_TR | 8.62 | 8.55 |
| tblVehicleTrips | WD_TR | 9.52 | 9.44 |
| tblWoodstoves | NumberCatalytic | 42.75 | 31.07 |
| tblWoodstoves | NumberNoncatalytic | 42.75 | 31.07 |

# 2.0 Emissions Summary

## 2.1 Overall Construction

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2034 | 0.2730 | 1.4445 | 2.4409 | 6.3800e-003 | 0.6523 | 0.0366 | 0.6889 | 0.2990 | 0.0366 | 0.3355 | 0.0000 | 570.3280 | 570.3280 | 0.0243 | 0.0000 | 570.9364 |
| 2035 | 0.1753 | 1.1093 | 2.2159 | 5.0600e-003 | 0.0807 | 0.0122 | 0.0928 | 0.0218 | 0.0122 | 0.0339 | 0.0000 | 437.8082 | 437.8082 | 0.0182 | 0.0000 | 438.2627 |
| 2036 | 0.1760 | 1.1136 | 2.2244 | 5.0800e-003 | 0.0810 | 0.0122 | 0.0932 | 0.0219 | 0.0122 | 0.0341 | 0.0000 | 439.4857 | 439.4857 | 0.0183 | 0.0000 | 439.9419 |
| 2037 | 1.3366 | 0.4190 | 1.0185 | 2.0900e-003 | 0.0251 | 8.3400e-003 | 0.0335 | 6.7600e-003 | 8.3300e-003 | 0.0151 | 0.0000 | 180.6100 | 180.6100 | 7.1700e-003 | 0.0000 | 180.7892 |
| **Maximum** | **1.3366** | **1.4445** | **2.4409** | **6.3800e-003** | **0.6523** | **0.0366** | **0.6889** | **0.2990** | **0.0366** | **0.3355** | **0.0000** | **570.3280** | **570.3280** | **0.0243** | **0.0000** | **570.9364** |

## 2.1 Overall Construction

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2034 | 0.2730 | 1.4445 | 2.4409 | 6.3800e-003 | 0.3244 | 0.0366 | 0.3610 | 0.1428 | 0.0366 | 0.1794 | 0.0000 | 570.3273 | 570.3273 | 0.0243 | 0.0000 | 570.9358 |
| 2035 | 0.1753 | 1.1093 | 2.2159 | 5.0600e-003 | 0.0807 | 0.0122 | 0.0928 | 0.0218 | 0.0122 | 0.0339 | 0.0000 | 437.8078 | 437.8078 | 0.0182 | 0.0000 | 438.2623 |
| 2036 | 0.1760 | 1.1136 | 2.2244 | 5.0800e-003 | 0.0810 | 0.0122 | 0.0932 | 0.0219 | 0.0122 | 0.0341 | 0.0000 | 439.4853 | 439.4853 | 0.0183 | 0.0000 | 439.9415 |
| 2037 | 1.3366 | 0.4190 | 1.0185 | 2.0900e-003 | 0.0251 | 8.3400e-003 | 0.0335 | 6.7600e-003 | 8.3300e-003 | 0.0151 | 0.0000 | 180.6098 | 180.6098 | 7.1700e-003 | 0.0000 | 180.7890 |
| **Maximum** | **1.3366** | **1.4445** | **2.4409** | **6.3800e-003** | **0.3244** | **0.0366** | **0.3610** | **0.1428** | **0.0366** | **0.1794** | **0.0000** | **570.3273** | **570.3273** | **0.0243** | **0.0000** | **570.9358** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **39.08** | **0.00** | **36.10** | **44.68** | **0.00** | **37.29** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| **1** | **1-1-2034** | **3-31-2034** | 0.5372 | 0.5372 |
| **2** | **4-1-2034** | **6-30-2034** | 0.4776 | 0.4776 |
| **3** | **7-1-2034** | **9-30-2034** | 0.3523 | 0.3523 |
| **4** | **10-1-2034** | **12-31-2034** | 0.3527 | 0.3527 |
| **5** | **1-1-2035** | **3-31-2035** | 0.3167 | 0.3167 |
| **6** | **4-1-2035** | **6-30-2035** | 0.3199 | 0.3199 |
| **7** | **7-1-2035** | **9-30-2035** | 0.3234 | 0.3234 |
| **8** | **10-1-2035** | **12-31-2035** | 0.3237 | 0.3237 |

| | | | | |
|---|---|---|---|---|
| **9** | **1-1-2036** | **3-31-2036** | 0.3202 | 0.3202 |
| **10** | **4-1-2036** | **6-30-2036** | 0.3199 | 0.3199 |
| **11** | **7-1-2036** | **9-30-2036** | 0.3234 | 0.3234 |
| **12** | **10-1-2036** | **12-31-2036** | 0.3237 | 0.3237 |
| **13** | **1-1-2037** | **3-31-2037** | 0.3112 | 0.3112 |
| **14** | **4-1-2037** | **6-30-2037** | 0.4580 | 0.4580 |
| **15** | **7-1-2037** | **9-30-2037** | 0.9839 | 0.9839 |
| | | **Highest** | 0.9839 | 0.9839 |

## 2.2 Overall Operational

**Unmitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 2.1786 | 0.1728 | 7.0515 | 0.0192 | | 0.9504 | 0.9504 | | 0.9504 | 0.9504 | 125.6074 | 76.5978 | 202.2052 | 0.5906 | 1.3700e-003 | 217.3774 |
| Energy | 0.0243 | 0.2072 | 0.0882 | 1.3200e-003 | | 0.0168 | 0.0168 | | 0.0168 | 0.0168 | 0.0000 | 438.1894 | 438.1894 | 0.0196 | 7.8200e-003 | 441.0098 |
| Mobile | 0.2297 | 0.9740 | 2.8736 | 0.0133 | 1.7304 | 7.7800e-003 | 1.7382 | 0.4630 | 7.2200e-003 | 0.4702 | 0.0000 | 1,229.5148 | 1,229.5148 | 0.0542 | 0.0000 | 1,230.8701 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 35.9538 | 0.0000 | 35.9538 | 2.1248 | 0.0000 | 89.0739 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 3.5553 | 11.2292 | 14.7845 | 0.3660 | 8.8200e-003 | 26.5620 |
| **Total** | **2.4325** | **1.3541** | **10.0132** | **0.0339** | **1.7304** | **0.9749** | **2.7053** | **0.4630** | **0.9743** | **1.4373** | **165.1165** | **1,755.5312** | **1,920.6476** | **3.1553** | **0.0180** | **2,004.8933** |

## 2.2 Overall Operational

**Mitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 1.3807 | 0.0790 | 1.3011 | 4.8000e-004 | | 0.0123 | 0.0123 | | 0.0123 | 0.0123 | 0.0000 | 76.5978 | 76.5978 | 3.4200e-003 | 1.3700e-003 | 77.0903 |
| Energy | 0.0228 | 0.1948 | 0.0829 | 1.2400e-003 | | 0.0158 | 0.0158 | | 0.0158 | 0.0158 | 0.0000 | 422.2058 | 422.2058 | 0.0192 | 7.5300e-003 | 424.9295 |
| Mobile | 0.2246 | 0.9444 | 2.7128 | 0.0125 | 1.6110 | 7.3100e-003 | 1.6183 | 0.4310 | 6.7900e-003 | 0.4378 | 0.0000 | 1,150.5924 | 1,150.5924 | 0.0521 | 0.0000 | 1,151.8952 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 26.9653 | 0.0000 | 26.9653 | 1.5936 | 0.0000 | 66.8054 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 2.8442 | 8.9833 | 11.8276 | 0.2928 | 7.0500e-003 | 21.2496 |
| **Total** | **1.6281** | **1.2182** | **4.0968** | **0.0142** | **1.6110** | **0.0353** | **1.6464** | **0.4310** | **0.0348** | **0.4659** | **29.8096** | **1,658.3793** | **1,688.1889** | **1.9612** | **0.0160** | **1,741.9700** |

| | **ROG** | **NOx** | **CO** | **SO2** | **Fugitive PM10** | **Exhaust PM10** | **PM10 Total** | **Fugitive PM2.5** | **Exhaust PM2.5** | **PM2.5 Total** | **Bio- CO2** | **NBio-CO2** | **Total CO2** | **CH4** | **N20** | **CO2e** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **33.07** | **10.04** | **59.09** | **58.15** | **6.90** | **96.37** | **39.14** | **6.90** | **96.43** | **67.59** | **81.95** | **5.53** | **12.10** | **37.84** | **11.44** | **13.11** |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 1/1/2034 | 2/10/2034 | 5 | 30 | |
| 2 | Grading | Grading | 2/11/2034 | 5/26/2034 | 5 | 75 | |
| 3 | Building Construction | Building Construction | 5/27/2034 | 3/27/2037 | 5 | 740 | |
| 4 | Paving | Paving | 3/28/2037 | 6/12/2037 | 5 | 55 | |
| 5 | Architectural Coating | Architectural Coating | 6/13/2037 | 8/28/2037 | 5 | 55 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 187.5**

**Acres of Paving: 0**

**Residential Indoor: 626,940; Residential Outdoor: 208,980; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

**<u>OffRoad Equipment</u>**

Lacey Ranch Master Plan Phase 4 Const and Ops - Kings County, Annual

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 62.00 | 18.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 12.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

## 3.2 Site Preparation - 2034

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.2710 | 0.0000 | 0.2710 | 0.1490 | 0.0000 | 0.1490 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0366 | 0.2050 | 0.2444 | 7.0000e-004 | | 6.5500e-003 | 6.5500e-003 | | 6.5500e-003 | 6.5500e-003 | 0.0000 | 60.0069 | 60.0069 | 2.9600e-003 | 0.0000 | 60.0809 |
| **Total** | **0.0366** | **0.2050** | **0.2444** | **7.0000e-004** | **0.2710** | **6.5500e-003** | **0.2775** | **0.1490** | **6.5500e-003** | **0.1555** | **0.0000** | **60.0069** | **60.0069** | **2.9600e-003** | **0.0000** | **60.0809** |

## 3.2 Site Preparation - 2034

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 4.3000e-004 | 2.3000e-004 | 2.9600e-003 | 1.0000e-005 | 2.1700e-003 | 1.0000e-005 | 2.1800e-003 | 5.8000e-004 | 1.0000e-005 | 5.8000e-004 | 0.0000 | 1.2226 | 1.2226 | 2.0000e-005 | 0.0000 | 1.2230 |
| **Total** | **4.3000e-004** | **2.3000e-004** | **2.9600e-003** | **1.0000e-005** | **2.1700e-003** | **1.0000e-005** | **2.1800e-003** | **5.8000e-004** | **1.0000e-005** | **5.8000e-004** | **0.0000** | **1.2226** | **1.2226** | **2.0000e-005** | **0.0000** | **1.2230** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.1220 | 0.0000 | 0.1220 | 0.0670 | 0.0000 | 0.0670 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.0366 | 0.2050 | 0.2444 | 7.0000e-004 | | 6.5500e-003 | 6.5500e-003 | | 6.5500e-003 | 6.5500e-003 | 0.0000 | 60.0069 | 60.0069 | 2.9600e-003 | 0.0000 | 60.0809 |
| **Total** | **0.0366** | **0.2050** | **0.2444** | **7.0000e-004** | **0.1220** | **6.5500e-003** | **0.1285** | **0.0670** | **6.5500e-003** | **0.0736** | **0.0000** | **60.0069** | **60.0069** | **2.9600e-003** | **0.0000** | **60.0809** |

## 3.2 Site Preparation - 2034

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 4.3000e-004 | 2.3000e-004 | 2.9600e-003 | 1.0000e-005 | 2.1700e-003 | 1.0000e-005 | 2.1800e-003 | 5.8000e-004 | 1.0000e-005 | 5.8000e-004 | 0.0000 | 1.2226 | 1.2226 | 2.0000e-005 | 0.0000 | 1.2230 |
| **Total** | **4.3000e-004** | **2.3000e-004** | **2.9600e-003** | **1.0000e-005** | **2.1700e-003** | **1.0000e-005** | **2.1800e-003** | **5.8000e-004** | **1.0000e-005** | **5.8000e-004** | **0.0000** | **1.2226** | **1.2226** | **2.0000e-005** | **0.0000** | **1.2230** |

## 3.3 Grading - 2034

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.3253 | 0.0000 | 0.3253 | 0.1349 | 0.0000 | 0.1349 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.1230 | 0.5192 | 0.8634 | 2.6200e-003 | | 0.0183 | 0.0183 | | 0.0183 | 0.0183 | 0.0000 | 245.3858 | 245.3858 | 9.9200e-003 | 0.0000 | 245.6338 |
| **Total** | **0.1230** | **0.5192** | **0.8634** | **2.6200e-003** | **0.3253** | **0.0183** | **0.3436** | **0.1349** | **0.0183** | **0.1532** | **0.0000** | **245.3858** | **245.3858** | **9.9200e-003** | **0.0000** | **245.6338** |

## 3.3 Grading - 2034

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.2000e-003 | 6.5000e-004 | 8.2200e-003 | 4.0000e-005 | 6.0300e-003 | 2.0000e-005 | 6.0500e-003 | 1.6000e-003 | 2.0000e-005 | 1.6200e-003 | 0.0000 | 3.3960 | 3.3960 | 4.0000e-005 | 0.0000 | 3.3971 |
| **Total** | **1.2000e-003** | **6.5000e-004** | **8.2200e-003** | **4.0000e-005** | **6.0300e-003** | **2.0000e-005** | **6.0500e-003** | **1.6000e-003** | **2.0000e-005** | **1.6200e-003** | **0.0000** | **3.3960** | **3.3960** | **4.0000e-005** | **0.0000** | **3.3971** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.1464 | 0.0000 | 0.1464 | 0.0607 | 0.0000 | 0.0607 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.1230 | 0.5192 | 0.8634 | 2.6200e-003 | | 0.0183 | 0.0183 | | 0.0183 | 0.0183 | 0.0000 | 245.3855 | 245.3855 | 9.9200e-003 | 0.0000 | 245.6335 |
| **Total** | **0.1230** | **0.5192** | **0.8634** | **2.6200e-003** | **0.1464** | **0.0183** | **0.1647** | **0.0607** | **0.0183** | **0.0790** | **0.0000** | **245.3855** | **245.3855** | **9.9200e-003** | **0.0000** | **245.6335** |

## 3.3 Grading - 2034

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 1.2000e-003 | 6.5000e-004 | 8.2200e-003 | 4.0000e-005 | 6.0300e-003 | 2.0000e-005 | 6.0500e-003 | 1.6000e-003 | 2.0000e-005 | 1.6200e-003 | 0.0000 | 3.3960 | 3.3960 | 4.0000e-005 | 0.0000 | 3.3971 |
| **Total** | **1.2000e-003** | **6.5000e-004** | **8.2200e-003** | **4.0000e-005** | **6.0300e-003** | **2.0000e-005** | **6.0500e-003** | **1.6000e-003** | **2.0000e-005** | **1.6200e-003** | **0.0000** | **3.3960** | **3.3960** | **4.0000e-005** | **0.0000** | **3.3971** |

## 3.4 Building Construction - 2034

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1015 | 0.6149 | 1.2522 | 2.4000e-003 | | 0.0115 | 0.0115 | | 0.0115 | 0.0115 | 0.0000 | 203.7173 | 203.7173 | 8.1700e-003 | 0.0000 | 203.9216 |
| **Total** | **0.1015** | **0.6149** | **1.2522** | **2.4000e-003** | | **0.0115** | **0.0115** | | **0.0115** | **0.0115** | **0.0000** | **203.7173** | **203.7173** | **8.1700e-003** | **0.0000** | **203.9216** |

## 3.4 Building Construction - 2034

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 2.6400e-003 | 0.1003 | 0.0171 | 3.7000e-004 | 9.2900e-003 | 1.0000e-004 | 9.3900e-003 | 2.6800e-003 | 1.0000e-004 | 2.7800e-003 | 0.0000 | 34.8420 | 34.8420 | 2.9500e-003 | 0.0000 | 34.9157 |
| Worker | 7.6800e-003 | 4.1400e-003 | 0.0527 | 2.4000e-004 | 0.0386 | 1.3000e-004 | 0.0387 | 0.0103 | 1.2000e-004 | 0.0104 | 0.0000 | 21.7573 | 21.7573 | 2.8000e-004 | 0.0000 | 21.7643 |
| **Total** | **0.0103** | **0.1045** | **0.0698** | **6.1000e-004** | **0.0479** | **2.3000e-004** | **0.0481** | **0.0129** | **2.2000e-004** | **0.0132** | **0.0000** | **56.5993** | **56.5993** | **3.2300e-003** | **0.0000** | **56.6800** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1015 | 0.6149 | 1.2522 | 2.4000e-003 | | 0.0115 | 0.0115 | | 0.0115 | 0.0115 | 0.0000 | 203.7171 | 203.7171 | 8.1700e-003 | 0.0000 | 203.9214 |
| **Total** | **0.1015** | **0.6149** | **1.2522** | **2.4000e-003** | | **0.0115** | **0.0115** | | **0.0115** | **0.0115** | **0.0000** | **203.7171** | **203.7171** | **8.1700e-003** | **0.0000** | **203.9214** |

## 3.4 Building Construction - 2034

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 2.6400e-003 | 0.1003 | 0.0171 | 3.7000e-004 | 9.2900e-003 | 1.0000e-004 | 9.3900e-003 | 2.6800e-003 | 1.0000e-004 | 2.7800e-003 | 0.0000 | 34.8420 | 34.8420 | 2.9500e-003 | 0.0000 | 34.9157 |
| Worker | 7.6800e-003 | 4.1400e-003 | 0.0527 | 2.4000e-004 | 0.0386 | 1.3000e-004 | 0.0387 | 0.0103 | 1.2000e-004 | 0.0104 | 0.0000 | 21.7573 | 21.7573 | 2.8000e-004 | 0.0000 | 21.7643 |
| **Total** | **0.0103** | **0.1045** | **0.0698** | **6.1000e-004** | **0.0479** | **2.3000e-004** | **0.0481** | **0.0129** | **2.2000e-004** | **0.0132** | **0.0000** | **56.5993** | **56.5993** | **3.2300e-003** | **0.0000** | **56.6800** |

## 3.4 Building Construction - 2035

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1588 | 0.9346 | 2.1034 | 4.0400e-003 | | 0.0118 | 0.0118 | | 0.0118 | 0.0118 | 0.0000 | 343.0336 | 343.0336 | 0.0128 | 0.0000 | 343.3530 |
| **Total** | **0.1588** | **0.9346** | **2.1034** | **4.0400e-003** | | **0.0118** | **0.0118** | | **0.0118** | **0.0118** | **0.0000** | **343.0336** | **343.0336** | **0.0128** | **0.0000** | **343.3530** |

## 3.4 Building Construction - 2035

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 4.4300e-003 | 0.1682 | 0.0286 | 6.2000e-004 | 0.0156 | 1.7000e-004 | 0.0158 | 4.5200e-003 | 1.6000e-004 | 4.6800e-003 | 0.0000 | 58.6572 | 58.6572 | 4.9700e-003 | 0.0000 | 58.7815 |
| Worker | 0.0121 | 6.5300e-003 | 0.0840 | 4.0000e-004 | 0.0650 | 2.1000e-004 | 0.0652 | 0.0173 | 1.9000e-004 | 0.0175 | 0.0000 | 36.1174 | 36.1174 | 4.3000e-004 | 0.0000 | 36.1282 |
| **Total** | **0.0166** | **0.1748** | **0.1126** | **1.0200e-003** | **0.0806** | **3.8000e-004** | **0.0810** | **0.0218** | **3.5000e-004** | **0.0221** | **0.0000** | **94.7746** | **94.7746** | **5.4000e-003** | **0.0000** | **94.9097** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1588 | 0.9346 | 2.1034 | 4.0400e-003 | | 0.0118 | 0.0118 | | 0.0118 | 0.0118 | 0.0000 | 343.0332 | 343.0332 | 0.0128 | 0.0000 | 343.3526 |
| **Total** | **0.1588** | **0.9346** | **2.1034** | **4.0400e-003** | | **0.0118** | **0.0118** | | **0.0118** | **0.0118** | **0.0000** | **343.0332** | **343.0332** | **0.0128** | **0.0000** | **343.3526** |

## 3.4 Building Construction - 2035

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 4.4300e-003 | 0.1682 | 0.0286 | 6.2000e-004 | 0.0156 | 1.7000e-004 | 0.0158 | 4.5200e-003 | 1.6000e-004 | 4.6800e-003 | 0.0000 | 58.6572 | 58.6572 | 4.9700e-003 | 0.0000 | 58.7815 |
| Worker | 0.0121 | 6.5300e-003 | 0.0840 | 4.0000e-004 | 0.0650 | 2.1000e-004 | 0.0652 | 0.0173 | 1.9000e-004 | 0.0175 | 0.0000 | 36.1174 | 36.1174 | 4.3000e-004 | 0.0000 | 36.1282 |
| **Total** | **0.0166** | **0.1748** | **0.1126** | **1.0200e-003** | **0.0806** | **3.8000e-004** | **0.0810** | **0.0218** | **3.5000e-004** | **0.0221** | **0.0000** | **94.7746** | **94.7746** | **5.4000e-003** | **0.0000** | **94.9097** |

## 3.4 Building Construction - 2036

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1594 | 0.9381 | 2.1114 | 4.0600e-003 | | 0.0118 | 0.0118 | | 0.0118 | 0.0118 | 0.0000 | 344.3479 | 344.3479 | 0.0128 | 0.0000 | 344.6686 |
| **Total** | **0.1594** | **0.9381** | **2.1114** | **4.0600e-003** | | **0.0118** | **0.0118** | | **0.0118** | **0.0118** | **0.0000** | **344.3479** | **344.3479** | **0.0128** | **0.0000** | **344.6686** |

## 3.4 Building Construction - 2036

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 4.4400e-003 | 0.1689 | 0.0287 | 6.2000e-004 | 0.0157 | 1.7000e-004 | 0.0159 | 4.5400e-003 | 1.6000e-004 | 4.7000e-003 | 0.0000 | 58.8820 | 58.8820 | 4.9900e-003 | 0.0000 | 59.0067 |
| Worker | 0.0122 | 6.5500e-003 | 0.0843 | 4.0000e-004 | 0.0653 | 2.1000e-004 | 0.0655 | 0.0173 | 1.9000e-004 | 0.0175 | 0.0000 | 36.2558 | 36.2558 | 4.3000e-004 | 0.0000 | 36.2666 |
| **Total** | **0.0166** | **0.1754** | **0.1130** | **1.0200e-003** | **0.0810** | **3.8000e-004** | **0.0813** | **0.0219** | **3.5000e-004** | **0.0222** | **0.0000** | **95.1377** | **95.1377** | **5.4200e-003** | **0.0000** | **95.2733** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.1594 | 0.9381 | 2.1114 | 4.0600e-003 | | 0.0118 | 0.0118 | | 0.0118 | 0.0118 | 0.0000 | 344.3475 | 344.3475 | 0.0128 | 0.0000 | 344.6682 |
| **Total** | **0.1594** | **0.9381** | **2.1114** | **4.0600e-003** | | **0.0118** | **0.0118** | | **0.0118** | **0.0118** | **0.0000** | **344.3475** | **344.3475** | **0.0128** | **0.0000** | **344.6682** |

## 3.4 Building Construction - 2036

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 4.4400e-003 | 0.1689 | 0.0287 | 6.2000e-004 | 0.0157 | 1.7000e-004 | 0.0159 | 4.5400e-003 | 1.6000e-004 | 4.7000e-003 | 0.0000 | 58.8820 | 58.8820 | 4.9900e-003 | 0.0000 | 59.0067 |
| Worker | 0.0122 | 6.5500e-003 | 0.0843 | 4.0000e-004 | 0.0653 | 2.1000e-004 | 0.0655 | 0.0173 | 1.9000e-004 | 0.0175 | 0.0000 | 36.2558 | 36.2558 | 4.3000e-004 | 0.0000 | 36.2666 |
| **Total** | **0.0166** | **0.1754** | **0.1130** | **1.0200e-003** | **0.0810** | **3.8000e-004** | **0.0813** | **0.0219** | **3.5000e-004** | **0.0222** | **0.0000** | **95.1377** | **95.1377** | **5.4200e-003** | **0.0000** | **95.2733** |

## 3.4 Building Construction - 2037

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0377 | 0.2220 | 0.4997 | 9.6000e-004 | | 2.8000e-003 | 2.8000e-003 | | 2.8000e-003 | 2.8000e-003 | 0.0000 | 81.4869 | 81.4869 | 3.0400e-003 | 0.0000 | 81.5628 |
| **Total** | **0.0377** | **0.2220** | **0.4997** | **9.6000e-004** | | **2.8000e-003** | **2.8000e-003** | | **2.8000e-003** | **2.8000e-003** | **0.0000** | **81.4869** | **81.4869** | **3.0400e-003** | **0.0000** | **81.5628** |

## 3.4 Building Construction - 2037

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 1.0500e-003 | 0.0400 | 6.7900e-003 | 1.5000e-004 | 3.7200e-003 | 4.0000e-005 | 3.7600e-003 | 1.0700e-003 | 4.0000e-005 | 1.1100e-003 | 0.0000 | 13.9339 | 13.9339 | 1.1800e-003 | 0.0000 | 13.9634 |
| Worker | 2.8800e-003 | 1.5500e-003 | 0.0200 | 9.0000e-005 | 0.0154 | 5.0000e-005 | 0.0155 | 4.1000e-003 | 5.0000e-005 | 4.1500e-003 | 0.0000 | 8.5796 | 8.5796 | 1.0000e-004 | 0.0000 | 8.5822 |
| **Total** | **3.9300e-003** | **0.0415** | **0.0267** | **2.4000e-004** | **0.0192** | **9.0000e-005** | **0.0193** | **5.1700e-003** | **9.0000e-005** | **5.2600e-003** | **0.0000** | **22.5135** | **22.5135** | **1.2800e-003** | **0.0000** | **22.5456** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0377 | 0.2220 | 0.4997 | 9.6000e-004 | | 2.8000e-003 | 2.8000e-003 | | 2.8000e-003 | 2.8000e-003 | 0.0000 | 81.4868 | 81.4868 | 3.0400e-003 | 0.0000 | 81.5627 |
| **Total** | **0.0377** | **0.2220** | **0.4997** | **9.6000e-004** | | **2.8000e-003** | **2.8000e-003** | | **2.8000e-003** | **2.8000e-003** | **0.0000** | **81.4868** | **81.4868** | **3.0400e-003** | **0.0000** | **81.5627** |

## 3.4 Building Construction - 2037

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 1.0500e-003 | 0.0400 | 6.7900e-003 | 1.5000e-004 | 3.7200e-003 | 4.0000e-005 | 3.7600e-003 | 1.0700e-003 | 4.0000e-005 | 1.1100e-003 | 0.0000 | 13.9339 | 13.9339 | 1.1800e-003 | 0.0000 | 13.9634 |
| Worker | 2.8800e-003 | 1.5500e-003 | 0.0200 | 9.0000e-005 | 0.0154 | 5.0000e-005 | 0.0155 | 4.1000e-003 | 5.0000e-005 | 4.1500e-003 | 0.0000 | 8.5796 | 8.5796 | 1.0000e-004 | 0.0000 | 8.5822 |
| **Total** | **3.9300e-003** | **0.0415** | **0.0267** | **2.4000e-004** | **0.0192** | **9.0000e-005** | **0.0193** | **5.1700e-003** | **9.0000e-005** | **5.2600e-003** | **0.0000** | **22.5135** | **22.5135** | **1.2800e-003** | **0.0000** | **22.5456** |

## 3.5 Paving - 2037

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0314 | 0.1341 | 0.4351 | 7.7000e-004 | | 5.1500e-003 | 5.1500e-003 | | 5.1500e-003 | 5.1500e-003 | 0.0000 | 66.2737 | 66.2737 | 2.5500e-003 | 0.0000 | 66.3374 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0314** | **0.1341** | **0.4351** | **7.7000e-004** | | **5.1500e-003** | **5.1500e-003** | | **5.1500e-003** | **5.1500e-003** | **0.0000** | **66.2737** | **66.2737** | **2.5500e-003** | **0.0000** | **66.3374** |

## 3.5 Paving - 2037

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 6.2000e-004 | 3.3000e-004 | 4.2800e-003 | 2.0000e-005 | 3.3100e-003 | 1.0000e-005 | 3.3200e-003 | 8.8000e-004 | 1.0000e-005 | 8.9000e-004 | 0.0000 | 1.8414 | 1.8414 | 2.0000e-005 | 0.0000 | 1.8419 |
| **Total** | **6.2000e-004** | **3.3000e-004** | **4.2800e-003** | **2.0000e-005** | **3.3100e-003** | **1.0000e-005** | **3.3200e-003** | **8.8000e-004** | **1.0000e-005** | **8.9000e-004** | **0.0000** | **1.8414** | **1.8414** | **2.0000e-005** | **0.0000** | **1.8419** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Off-Road | 0.0314 | 0.1341 | 0.4351 | 7.7000e-004 | | 5.1500e-003 | 5.1500e-003 | | 5.1500e-003 | 5.1500e-003 | 0.0000 | 66.2736 | 66.2736 | 2.5500e-003 | 0.0000 | 66.3374 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0314** | **0.1341** | **0.4351** | **7.7000e-004** | | **5.1500e-003** | **5.1500e-003** | | **5.1500e-003** | **5.1500e-003** | **0.0000** | **66.2736** | **66.2736** | **2.5500e-003** | **0.0000** | **66.3374** |

## 3.5 Paving - 2037

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 6.2000e-004 | 3.3000e-004 | 4.2800e-003 | 2.0000e-005 | 3.3100e-003 | 1.0000e-005 | 3.3200e-003 | 8.8000e-004 | 1.0000e-005 | 8.9000e-004 | 0.0000 | 1.8414 | 1.8414 | 2.0000e-005 | 0.0000 | 1.8419 |
| **Total** | **6.2000e-004** | **3.3000e-004** | **4.2800e-003** | **2.0000e-005** | **3.3100e-003** | **1.0000e-005** | **3.3200e-003** | **8.8000e-004** | **1.0000e-005** | **8.9000e-004** | **0.0000** | **1.8414** | **1.8414** | **2.0000e-005** | **0.0000** | **1.8419** |

## 3.6 Architectural Coating - 2037

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.2592 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 3.2400e-003 | 0.0208 | 0.0493 | 8.0000e-005 | | 2.7000e-004 | 2.7000e-004 | | 2.7000e-004 | 2.7000e-004 | 0.0000 | 7.0215 | 7.0215 | 2.6000e-004 | 0.0000 | 7.0279 |
| **Total** | **1.2625** | **0.0208** | **0.0493** | **8.0000e-005** | | **2.7000e-004** | **2.7000e-004** | | **2.7000e-004** | **2.7000e-004** | **0.0000** | **7.0215** | **7.0215** | **2.6000e-004** | **0.0000** | **7.0279** |

## 3.6 Architectural Coating - 2037

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 4.9000e-004 | 2.7000e-004 | 3.4300e-003 | 2.0000e-005 | 2.6500e-003 | 1.0000e-005 | 2.6600e-003 | 7.0000e-004 | 1.0000e-005 | 7.1000e-004 | 0.0000 | 1.4731 | 1.4731 | 2.0000e-005 | 0.0000 | 1.4735 |
| **Total** | **4.9000e-004** | **2.7000e-004** | **3.4300e-003** | **2.0000e-005** | **2.6500e-003** | **1.0000e-005** | **2.6600e-003** | **7.0000e-004** | **1.0000e-005** | **7.1000e-004** | **0.0000** | **1.4731** | **1.4731** | **2.0000e-005** | **0.0000** | **1.4735** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.2592 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 3.2400e-003 | 0.0208 | 0.0493 | 8.0000e-005 | | 2.7000e-004 | 2.7000e-004 | | 2.7000e-004 | 2.7000e-004 | 0.0000 | 7.0214 | 7.0214 | 2.6000e-004 | 0.0000 | 7.0279 |
| **Total** | **1.2625** | **0.0208** | **0.0493** | **8.0000e-005** | | **2.7000e-004** | **2.7000e-004** | | **2.7000e-004** | **2.7000e-004** | **0.0000** | **7.0214** | **7.0214** | **2.6000e-004** | **0.0000** | **7.0279** |

## 3.6 Architectural Coating - 2037

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 4.9000e-004 | 2.7000e-004 | 3.4300e-003 | 2.0000e-005 | 2.6500e-003 | 1.0000e-005 | 2.6600e-003 | 7.0000e-004 | 1.0000e-005 | 7.1000e-004 | 0.0000 | 1.4731 | 1.4731 | 2.0000e-005 | 0.0000 | 1.4735 |
| **Total** | **4.9000e-004** | **2.7000e-004** | **3.4300e-003** | **2.0000e-005** | **2.6500e-003** | **1.0000e-005** | **2.6600e-003** | **7.0000e-004** | **1.0000e-005** | **7.1000e-004** | **0.0000** | **1.4731** | **1.4731** | **2.0000e-005** | **0.0000** | **1.4735** |

# 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

| Category | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.2246 | 0.9444 | 2.7128 | 0.0125 | 1.6110 | 7.3100e-003 | 1.6183 | 0.4310 | 6.7900e-003 | 0.4378 | 0.0000 | 1,150.5924 | 1,150.5924 | 0.0521 | 0.0000 | 1,151.8952 |
| Unmitigated | 0.2297 | 0.9740 | 2.8736 | 0.0133 | 1.7304 | 7.7800e-003 | 1.7382 | 0.4630 | 7.2200e-003 | 0.4702 | 0.0000 | 1,229.5148 | 1,229.5148 | 0.0542 | 0.0000 | 1,230.8701 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Single Family Housing | 1,623.68 | 1,640.88 | 1470.60 | 4,591,816 | 4,274,981 |
| Total | 1,623.68 | 1,640.88 | 1,470.60 | 4,591,816 | 4,274,981 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Single Family Housing | 10.80 | 7.30 | 7.50 | 42.30 | 19.60 | 38.10 | 86 | 11 | 3 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Single Family Housing | 0.498700 | 0.230800 | 0.170300 | 0.060900 | 0.000800 | 0.001000 | 0.007600 | 0.018000 | 0.000000 | 0.004400 | 0.002700 | 0.001200 | 0.003600 |

# 5.0 Energy Detail

Historical Energy Use: N

## 5.1 Mitigation Measures Energy

Exceed Title 24

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Electricity Mitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 196.6361 | 196.6361 | 0.0149 | 3.3900e-003 | 198.0193 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 198.2134 | 198.2134 | 0.0150 | 3.4200e-003 | 199.6077 |
| NaturalGas Mitigated | 0.0228 | 0.1948 | 0.0829 | 1.2400e-003 | | 0.0158 | 0.0158 | | 0.0158 | 0.0158 | 0.0000 | 225.5698 | 225.5698 | 4.3200e-003 | 4.1400e-003 | 226.9102 |
| NaturalGas Unmitigated | 0.0243 | 0.2072 | 0.0882 | 1.3200e-003 | | 0.0168 | 0.0168 | | 0.0168 | 0.0168 | 0.0000 | 239.9761 | 239.9761 | 4.6000e-003 | 4.4000e-003 | 241.4021 |

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Single Family Housing | 4.49698e+006 | 0.0243 | 0.2072 | 0.0882 | 1.3200e-003 | | 0.0168 | 0.0168 | | 0.0168 | 0.0168 | 0.0000 | 239.9761 | 239.9761 | 4.6000e-003 | 4.4000e-003 | 241.4021 |
| **Total** | | **0.0243** | **0.2072** | **0.0882** | **1.3200e-003** | | **0.0168** | **0.0168** | | **0.0168** | **0.0168** | **0.0000** | **239.9761** | **239.9761** | **4.6000e-003** | **4.4000e-003** | **241.4021** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Single Family Housing | 4.22702e+006 | 0.0228 | 0.1948 | 0.0829 | 1.2400e-003 | | 0.0158 | 0.0158 | | 0.0158 | 0.0158 | 0.0000 | 225.5698 | 225.5698 | 4.3200e-003 | 4.1400e-003 | 226.9102 |
| **Total** | | **0.0228** | **0.1948** | **0.0829** | **1.2400e-003** | | **0.0158** | **0.0158** | | **0.0158** | **0.0158** | **0.0000** | **225.5698** | **225.5698** | **4.3200e-003** | **4.1400e-003** | **226.9102** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Single Family Housing | 1.50685e+006 | 198.2134 | 0.0150 | 3.4200e-003 | 199.6077 |
| **Total** | | **198.2134** | **0.0150** | **3.4200e-003** | **199.6077** |

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Single Family Housing | 1.49486e+006 | 196.6361 | 0.0149 | 3.3900e-003 | 198.0193 |
| **Total** | | **196.6361** | **0.0149** | **3.3900e-003** | **198.0193** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 1.3807 | 0.0790 | 1.3011 | 4.8000e-004 | | 0.0123 | 0.0123 | | 0.0123 | 0.0123 | 0.0000 | 76.5978 | 76.5978 | 3.4200e-003 | 1.3700e-003 | 77.0903 |
| Unmitigated | 2.1786 | 0.1728 | 7.0515 | 0.0192 | | 0.9504 | 0.9504 | | 0.9504 | 0.9504 | 125.6074 | 76.5978 | 202.2052 | 0.5906 | 1.3700e-003 | 217.3774 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.2906 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 1.2091 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 0.6407 | 0.1582 | 5.7777 | 0.0192 | | 0.9433 | 0.9433 | | 0.9433 | 0.9433 | 125.6074 | 74.5117 | 200.1191 | 0.5886 | 1.3700e-003 | 215.2416 |
| Landscaping | 0.0381 | 0.0147 | 1.2737 | 7.0000e-005 | | 7.0800e-003 | 7.0800e-003 | | 7.0800e-003 | 7.0800e-003 | 0.0000 | 2.0862 | 2.0862 | 1.9900e-003 | 0.0000 | 2.1358 |
| **Total** | **2.1786** | **0.1728** | **7.0515** | **0.0192** | | **0.9504** | **0.9504** | | **0.9504** | **0.9504** | **125.6074** | **76.5978** | **202.2052** | **0.5906** | **1.3700e-003** | **217.3774** |

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.1259 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 1.2091 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 7.5300e-003 | 0.0643 | 0.0274 | 4.1000e-004 | | 5.2000e-003 | 5.2000e-003 | | 5.2000e-003 | 5.2000e-003 | 0.0000 | 74.5117 | 74.5117 | 1.4300e-003 | 1.3700e-003 | 74.9545 |
| Landscaping | 0.0381 | 0.0147 | 1.2737 | 7.0000e-005 | | 7.0800e-003 | 7.0800e-003 | | 7.0800e-003 | 7.0800e-003 | 0.0000 | 2.0862 | 2.0862 | 1.9900e-003 | 0.0000 | 2.1358 |
| **Total** | **1.3807** | **0.0790** | **1.3011** | **4.8000e-004** | | **0.0123** | **0.0123** | | **0.0123** | **0.0123** | **0.0000** | **76.5978** | **76.5978** | **3.4200e-003** | **1.3700e-003** | **77.0903** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 11.8276 | 0.2928 | 7.0500e-003 | 21.2496 |
| Unmitigated | 14.7845 | 0.3660 | 8.8200e-003 | 26.5620 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Single Family Housing | 11.2065 / 7.06496 | 14.7845 | 0.3660 | 8.8200e-003 | 26.5620 |
| **Total** | | **14.7845** | **0.3660** | **8.8200e-003** | **26.5620** |

### 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Single Family Housing | 8.96519 / 5.65197 | 11.8276 | 0.2928 | 7.0500e-003 | 21.2496 |
| **Total** | | **11.8276** | **0.2928** | **7.0500e-003** | **21.2496** |

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 26.9653 | 1.5936 | 0.0000 | 66.8054 |
| Unmitigated | 35.9538 | 2.1248 | 0.0000 | 89.0739 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Single Family Housing | 177.12 | 35.9538 | 2.1248 | 0.0000 | 89.0739 |
| **Total** | | **35.9538** | **2.1248** | **0.0000** | **89.0739** |

## 8.2 Waste by Land Use

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Single Family Housing | 132.84 | 26.9653 | 1.5936 | 0.0000 | 66.8054 |
| **Total** | | **26.9653** | **1.5936** | **0.0000** | **66.8054** |

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

# CalEEMod Output

# Full Project Operations 2038 (Annual)

# Lacey Ranch Master Plan Buildout Ops Only

## Kings County, Annual

# 1.0 Project Characteristics

## 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| City Park | 7.90 | Acre | 7.90 | 344,124.00 | 0 |
| Apartments Low Rise | 204.00 | Dwelling Unit | 12.14 | 204,000.00 | 583 |
| Single Family Housing | 547.00 | Dwelling Unit | 139.96 | 984,600.00 | 1564 |

## 1.2 Other Project Characteristics

**Urbanization** Urban **Wind Speed (m/s)** 2.2 **Precipitation Freq (Days)** 37

**Climate Zone** 3 **Operational Year** 2035

**Utility Company** Pacific Gas & Electric Company

**CO2 Intensity (lb/MWhr)** 290 **CH4 Intensity (lb/MWhr)** 0.022 **N2O Intensity (lb/MWhr)** 0.005

## 1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E Intensity Factors

Land Use - Project acres

Construction Phase -

Architectural Coating - Rule 4601 Architectural Coatings compliance

Vehicle Trips - ITE 10th Ed Trip Gen SFR 9.44, 9.54, 8.55, Apt 7.32, 8.14, 6.28

Woodstoves - Rule 4901 Residential Woodburning hearths allowed 2 per acre

Area Coating - Rule 4601 Architectural Coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Architectural Coatings

Energy Mitigation - 2019 Title 24

Water Mitigation - CalGreen indoor water savings and MWELO outdoor savings

Waste Mitigation - Calrecycle 75% diversion mandate

Fleet Mix - SJVAPCD Residential Fleet Mix for 2038

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblArchitecturalCoating | EF_Residential_Exterior | 150.00 | 65.00 |
| tblArchitecturalCoating | EF_Residential_Interior | 150.00 | 65.00 |
| tblAreaMitigation | UseLowVOCPaintResidentialExteriorValue | 150 | 65 |
| tblAreaMitigation | UseLowVOCPaintResidentialInteriorValue | 150 | 65 |
| tblFleetMix | HHD | 0.16 | 0.02 |
| tblFleetMix | HHD | 0.16 | 0.02 |
| tblFleetMix | HHD | 0.16 | 0.02 |
| tblFleetMix | LDA | 0.53 | 0.49 |
| tblFleetMix | LDA | 0.53 | 0.49 |
| tblFleetMix | LDA | 0.53 | 0.49 |
| tblFleetMix | LDT1 | 0.03 | 0.23 |

| | | | |
|---|---|---|---|
| tblFleetMix | LDT1 | 0.03 | 0.23 |
| tblFleetMix | LDT1 | 0.03 | 0.23 |
| tblFleetMix | LDT2 | 0.16 | 0.17 |
| tblFleetMix | LDT2 | 0.16 | 0.17 |
| tblFleetMix | LDT2 | 0.16 | 0.17 |
| tblFleetMix | LHD1 | 8.9300e-003 | 9.0000e-004 |
| tblFleetMix | LHD1 | 8.9300e-003 | 9.0000e-004 |
| tblFleetMix | LHD1 | 8.9300e-003 | 9.0000e-004 |
| tblFleetMix | LHD2 | 3.3870e-003 | 1.0000e-003 |
| tblFleetMix | LHD2 | 3.3870e-003 | 1.0000e-003 |
| tblFleetMix | LHD2 | 3.3870e-003 | 1.0000e-003 |
| tblFleetMix | MCY | 4.9760e-003 | 3.1000e-003 |
| tblFleetMix | MCY | 4.9760e-003 | 3.1000e-003 |
| tblFleetMix | MCY | 4.9760e-003 | 3.1000e-003 |
| tblFleetMix | MDV | 0.09 | 0.06 |
| tblFleetMix | MDV | 0.09 | 0.06 |
| tblFleetMix | MDV | 0.09 | 0.06 |
| tblFleetMix | MH | 4.3700e-004 | 4.1000e-003 |
| tblFleetMix | MH | 4.3700e-004 | 4.1000e-003 |
| tblFleetMix | MH | 4.3700e-004 | 4.1000e-003 |
| tblFleetMix | MHD | 0.01 | 7.8000e-003 |
| tblFleetMix | MHD | 0.01 | 7.8000e-003 |
| tblFleetMix | MHD | 0.01 | 7.8000e-003 |
| tblFleetMix | OBUS | 1.6060e-003 | 0.00 |
| tblFleetMix | OBUS | 1.6060e-003 | 0.00 |
| tblFleetMix | OBUS | 1.6060e-003 | 0.00 |
| tblFleetMix | SBUS | 7.7700e-004 | 1.1000e-003 |

| | | | |
|---|---|---|---|
| tblFleetMix | SBUS | 7.7700e-004 | 1.1000e-003 |
| tblFleetMix | SBUS | 7.7700e-004 | 1.1000e-003 |
| tblFleetMix | UBUS | 1.2420e-003 | 4.4000e-003 |
| tblFleetMix | UBUS | 1.2420e-003 | 4.4000e-003 |
| tblFleetMix | UBUS | 1.2420e-003 | 4.4000e-003 |
| tblLandUse | LotAcreage | 12.75 | 12.14 |
| tblLandUse | LotAcreage | 177.60 | 139.96 |
| tblProjectCharacteristics | CH4IntensityFactor | 0.029 | 0.022 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 290 |
| tblProjectCharacteristics | N2OIntensityFactor | 0.006 | 0.005 |
| tblVehicleTrips | ST_TR | 7.16 | 8.14 |
| tblVehicleTrips | ST_TR | 9.91 | 9.54 |
| tblVehicleTrips | SU_TR | 6.07 | 8.28 |
| tblVehicleTrips | SU_TR | 8.62 | 8.55 |
| tblVehicleTrips | WD_TR | 6.59 | 7.32 |
| tblVehicleTrips | WD_TR | 9.52 | 9.44 |

## 2.0 Emissions Summary

## 2.1 Overall Construction

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2040 | 3.6012 | 0.0644 | 0.2148 | 6.2000e-004 | 0.0642 | 7.6000e-004 | 0.0649 | 0.0171 | 7.5000e-004 | 0.0178 | 0.0000 | 54.8859 | 54.8859 | 1.0400e-003 | 0.0000 | 54.9119 |
| 2041 | 1.2593 | 0.0225 | 0.0751 | 2.2000e-004 | 0.0224 | 2.7000e-004 | 0.0227 | 5.9600e-003 | 2.6000e-004 | 6.2200e-003 | 0.0000 | 19.1932 | 19.1932 | 3.6000e-004 | 0.0000 | 19.2023 |
| **Maximum** | **3.6012** | **0.0644** | **0.2148** | **6.2000e-004** | **0.0642** | **7.6000e-004** | **0.0649** | **0.0171** | **7.5000e-004** | **0.0178** | **0.0000** | **54.8859** | **54.8859** | **1.0400e-003** | **0.0000** | **54.9119** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2040 | 3.6012 | 0.0644 | 0.2148 | 6.2000e-004 | 0.0642 | 7.6000e-004 | 0.0649 | 0.0171 | 7.5000e-004 | 0.0178 | 0.0000 | 54.8859 | 54.8859 | 1.0400e-003 | 0.0000 | 54.9119 |
| 2041 | 1.2593 | 0.0225 | 0.0751 | 2.2000e-004 | 0.0224 | 2.7000e-004 | 0.0227 | 5.9600e-003 | 2.6000e-004 | 6.2200e-003 | 0.0000 | 19.1932 | 19.1932 | 3.6000e-004 | 0.0000 | 19.2023 |
| **Maximum** | **3.6012** | **0.0644** | **0.2148** | **6.2000e-004** | **0.0642** | **7.6000e-004** | **0.0649** | **0.0171** | **7.5000e-004** | **0.0178** | **0.0000** | **54.8859** | **54.8859** | **1.0400e-003** | **0.0000** | **54.9119** |

| | **ROG** | **NOx** | **CO** | **SO2** | **Fugitive PM10** | **Exhaust PM10** | **PM10 Total** | **Fugitive PM2.5** | **Exhaust PM2.5** | **PM2.5 Total** | **Bio- CO2** | **NBio-CO2** | **Total CO2** | **CH4** | **N20** | **CO2e** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| **58** | **4-1-2040** | **6-30-2040** | 0.7229 | 0.7229 |
| **59** | **7-1-2040** | **9-30-2040** | 1.4780 | 1.4780 |
| **60** | **10-1-2040** | **12-31-2040** | 1.4783 | 1.4783 |
| **61** | **1-1-2041** | **3-31-2041** | 1.2694 | 1.2694 |
| | | **Highest** | 1.4783 | 1.4783 |

## 2.2 Overall Operational

**Unmitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 9.0606 | 0.8043 | 33.8265 | 0.0939 | | 4.6458 | 4.6458 | | 4.6458 | 4.6458 | 614.8982 | 334.4476 | 949.3458 | 2.8894 | 5.9600e-003 | 1,023.3590 |
| Energy | 0.0927 | 0.7919 | 0.3370 | 5.0500e-003 | | 0.0640 | 0.0640 | | 0.0640 | 0.0640 | 0.0000 | 1,672.9559 | 1,672.9559 | 0.0749 | 0.0299 | 1,683.7228 |
| Mobile | 0.9347 | 4.3123 | 11.5942 | 0.0562 | 7.2151 | 0.0288 | 7.2439 | 1.9303 | 0.0267 | 1.9570 | 0.0000 | 5,199.6977 | 5,199.6977 | 0.2434 | 0.0000 | 5,205.7829 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 133.4787 | 0.0000 | 133.4787 | 7.8884 | 0.0000 | 330.6879 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 15.5235 | 53.3632 | 68.8867 | 1.5985 | 0.0386 | 120.3411 |
| **Total** | **10.0880** | **5.9084** | **45.7576** | **0.1552** | **7.2151** | **4.7386** | **11.9537** | **1.9303** | **4.7365** | **6.6668** | **763.9004** | **7,260.4644** | **8,024.3648** | **12.6946** | **0.0744** | **8,363.8938** |

## 2.2 Overall Operational

**Mitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 5.3287 | 0.3450 | 5.6763 | 2.0900e-003 | | 0.0536 | 0.0536 | | 0.0536 | 0.0536 | 0.0000 | 334.4476 | 334.4476 | 0.0149 | 5.9600e-003 | 336.5977 |
| Energy | 0.0872 | 0.7455 | 0.3172 | 4.7600e-003 | | 0.0603 | 0.0603 | | 0.0603 | 0.0603 | 0.0000 | 1,612.8845 | 1,612.8845 | 0.0734 | 0.0288 | 1,623.2876 |
| Mobile | 0.9131 | 4.1928 | 10.9434 | 0.0527 | 6.7173 | 0.0271 | 6.7443 | 1.7971 | 0.0251 | 1.8222 | 0.0000 | 4,868.5277 | 4,868.5277 | 0.2345 | 0.0000 | 4,874.3912 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 100.1091 | 0.0000 | 100.1091 | 5.9163 | 0.0000 | 248.0159 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 12.4188 | 42.6906 | 55.1093 | 1.2788 | 0.0309 | 96.2729 |
| **Total** | **6.3290** | **5.2833** | **16.9369** | **0.0595** | **6.7173** | **0.1410** | **6.8582** | **1.7971** | **0.1390** | **1.9361** | **112.5278** | **6,858.5504** | **6,971.0782** | **7.5179** | **0.0656** | **7,178.5654** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **37.26** | **10.58** | **62.99** | **61.66** | **6.90** | **97.03** | **42.63** | **6.90** | **97.07** | **70.96** | **85.27** | **5.54** | **13.13** | **40.78** | **11.86** | **14.17** |

# 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Architectural Coating | Architectural Coating | 5/17/2040 | 3/20/2041 | 5 | 220 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0**

**Residential Indoor: 2,406,915; Residential Outdoor: 802,305; Non-Residential Indoor: 300; Non-Residential Outdoor: 100; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Architectural Coating | 1 | 98.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

## 3.2 Architectural Coating - 2040

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 3.5828 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 9.3600e-003 | 0.0593 | 0.1461 | 2.4000e-004 | | 6.1000e-004 | 6.1000e-004 | | 6.1000e-004 | 6.1000e-004 | 0.0000 | 20.8090 | 20.8090 | 7.3000e-004 | 0.0000 | 20.8273 |
| **Total** | **3.5922** | **0.0593** | **0.1461** | **2.4000e-004** | | **6.1000e-004** | **6.1000e-004** | | **6.1000e-004** | **6.1000e-004** | **0.0000** | **20.8090** | **20.8090** | **7.3000e-004** | **0.0000** | **20.8273** |

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 9.0500e-003 | 5.1000e-003 | 0.0687 | 3.8000e-004 | 0.0642 | 1.6000e-004 | 0.0643 | 0.0171 | 1.4000e-004 | 0.0172 | 0.0000 | 34.0769 | 34.0769 | 3.1000e-004 | 0.0000 | 34.0846 |
| **Total** | **9.0500e-003** | **5.1000e-003** | **0.0687** | **3.8000e-004** | **0.0642** | **1.6000e-004** | **0.0643** | **0.0171** | **1.4000e-004** | **0.0172** | **0.0000** | **34.0769** | **34.0769** | **3.1000e-004** | **0.0000** | **34.0846** |

## 3.2 Architectural Coating - 2040

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 3.5828 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 9.3600e-003 | 0.0593 | 0.1461 | 2.4000e-004 | | 6.1000e-004 | 6.1000e-004 | | 6.1000e-004 | 6.1000e-004 | 0.0000 | 20.8090 | 20.8090 | 7.3000e-004 | 0.0000 | 20.8273 |
| **Total** | **3.5922** | **0.0593** | **0.1461** | **2.4000e-004** | | **6.1000e-004** | **6.1000e-004** | | **6.1000e-004** | **6.1000e-004** | **0.0000** | **20.8090** | **20.8090** | **7.3000e-004** | **0.0000** | **20.8273** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 9.0500e-003 | 5.1000e-003 | 0.0687 | 3.8000e-004 | 0.0642 | 1.6000e-004 | 0.0643 | 0.0171 | 1.4000e-004 | 0.0172 | 0.0000 | 34.0769 | 34.0769 | 3.1000e-004 | 0.0000 | 34.0846 |
| **Total** | **9.0500e-003** | **5.1000e-003** | **0.0687** | **3.8000e-004** | **0.0642** | **1.6000e-004** | **0.0643** | **0.0171** | **1.4000e-004** | **0.0172** | **0.0000** | **34.0769** | **34.0769** | **3.1000e-004** | **0.0000** | **34.0846** |

## 3.2 Architectural Coating - 2041

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.2529 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 3.2700e-003 | 0.0207 | 0.0511 | 8.0000e-005 | | 2.1000e-004 | 2.1000e-004 | | 2.1000e-004 | 2.1000e-004 | 0.0000 | 7.2768 | 7.2768 | 2.6000e-004 | 0.0000 | 7.2832 |
| **Total** | **1.2562** | **0.0207** | **0.0511** | **8.0000e-005** | | **2.1000e-004** | **2.1000e-004** | | **2.1000e-004** | **2.1000e-004** | **0.0000** | **7.2768** | **7.2768** | **2.6000e-004** | **0.0000** | **7.2832** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 3.1600e-003 | 1.7800e-003 | 0.0240 | 1.3000e-004 | 0.0224 | 5.0000e-005 | 0.0225 | 5.9600e-003 | 5.0000e-005 | 6.0100e-003 | 0.0000 | 11.9165 | 11.9165 | 1.1000e-004 | 0.0000 | 11.9192 |
| **Total** | **3.1600e-003** | **1.7800e-003** | **0.0240** | **1.3000e-004** | **0.0224** | **5.0000e-005** | **0.0225** | **5.9600e-003** | **5.0000e-005** | **6.0100e-003** | **0.0000** | **11.9165** | **11.9165** | **1.1000e-004** | **0.0000** | **11.9192** |

## 3.2 Architectural Coating - 2041

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | 1.2529 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 3.2700e-003 | 0.0207 | 0.0511 | 8.0000e-005 | | 2.1000e-004 | 2.1000e-004 | | 2.1000e-004 | 2.1000e-004 | 0.0000 | 7.2768 | 7.2768 | 2.6000e-004 | 0.0000 | 7.2832 |
| **Total** | **1.2562** | **0.0207** | **0.0511** | **8.0000e-005** | | **2.1000e-004** | **2.1000e-004** | | **2.1000e-004** | **2.1000e-004** | **0.0000** | **7.2768** | **7.2768** | **2.6000e-004** | **0.0000** | **7.2832** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 3.1600e-003 | 1.7800e-003 | 0.0240 | 1.3000e-004 | 0.0224 | 5.0000e-005 | 0.0225 | 5.9600e-003 | 5.0000e-005 | 6.0100e-003 | 0.0000 | 11.9165 | 11.9165 | 1.1000e-004 | 0.0000 | 11.9192 |
| **Total** | **3.1600e-003** | **1.7800e-003** | **0.0240** | **1.3000e-004** | **0.0224** | **5.0000e-005** | **0.0225** | **5.9600e-003** | **5.0000e-005** | **6.0100e-003** | **0.0000** | **11.9165** | **11.9165** | **1.1000e-004** | **0.0000** | **11.9192** |

## 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.9131 | 4.1928 | 10.9434 | 0.0527 | 6.7173 | 0.0271 | 6.7443 | 1.7971 | 0.0251 | 1.8222 | 0.0000 | 4,868.5277 | 4,868.5277 | 0.2345 | 0.0000 | 4,874.3912 |
| Unmitigated | 0.9347 | 4.3123 | 11.5942 | 0.0562 | 7.2151 | 0.0288 | 7.2439 | 1.9303 | 0.0267 | 1.9570 | 0.0000 | 5,199.6977 | 5,199.6977 | 0.2434 | 0.0000 | 5,205.7829 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Apartments Low Rise | 1,493.28 | 1,660.56 | 1689.12 | 4,422,616 | 4,117,456 |
| City Park | 14.93 | 179.73 | 132.25 | 117,913 | 109,777 |
| Single Family Housing | 5,163.68 | 5,218.38 | 4676.85 | 14,603,043 | 13,595,433 |
| Total | 6,671.89 | 7,058.67 | 6,498.22 | 19,143,572 | 17,822,665 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Apartments Low Rise | 10.80 | 7.30 | 7.50 | 42.30 | 19.60 | 38.10 | 86 | 11 | 3 |
| City Park | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 66 | 28 | 6 |
| Single Family Housing | 10.80 | 7.30 | 7.50 | 42.30 | 19.60 | 38.10 | 86 | 11 | 3 |

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Low Rise | 0.488300 | 0.234800 | 0.171200 | 0.060200 | 0.000900 | 0.001000 | 0.007800 | 0.021300 | 0.000000 | 0.004400 | 0.003100 | 0.001100 | 0.004100 |
| City Park | 0.488300 | 0.234800 | 0.171200 | 0.060200 | 0.000900 | 0.001000 | 0.007800 | 0.021300 | 0.000000 | 0.004400 | 0.003100 | 0.001100 | 0.004100 |
| Single Family Housing | 0.488300 | 0.234800 | 0.171200 | 0.060200 | 0.000900 | 0.001000 | 0.007800 | 0.021300 | 0.000000 | 0.004400 | 0.003100 | 0.001100 | 0.004100 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Electricity Mitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 749.5631 | 749.5631 | 0.0569 | 0.0129 | 754.8359 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 755.8837 | 755.8837 | 0.0573 | 0.0130 | 761.2009 |
| NaturalGas Mitigated | 0.0872 | 0.7455 | 0.3172 | 4.7600e-003 | | 0.0603 | 0.0603 | | 0.0603 | 0.0603 | 0.0000 | 863.3214 | 863.3214 | 0.0166 | 0.0158 | 868.4517 |
| NaturalGas Unmitigated | 0.0927 | 0.7919 | 0.3370 | 5.0500e-003 | | 0.0640 | 0.0640 | | 0.0640 | 0.0640 | 0.0000 | 917.0722 | 917.0722 | 0.0176 | 0.0168 | 922.5219 |

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Apartments Low Rise | 2.88384e+006 | 0.0156 | 0.1329 | 0.0566 | 8.5000e-004 | | 0.0107 | 0.0107 | | 0.0107 | 0.0107 | 0.0000 | 153.8926 | 153.8926 | 2.9500e-003 | 2.8200e-003 | 154.8071 |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 1.43014e+007 | 0.0771 | 0.6590 | 0.2804 | 4.2100e-003 | | 0.0533 | 0.0533 | | 0.0533 | 0.0533 | 0.0000 | 763.1796 | 763.1796 | 0.0146 | 0.0140 | 767.7148 |
| **Total** | | **0.0927** | **0.7919** | **0.3370** | **5.0600e-003** | | **0.0640** | **0.0640** | | **0.0640** | **0.0640** | **0.0000** | **917.0722** | **917.0722** | **0.0176** | **0.0168** | **922.5219** |

## 5.2 Energy by Land Use - NaturalGas

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Apartments Low Rise | 2.73513e +006 | 0.0148 | 0.1260 | 0.0536 | 8.0000e-004 | | 0.0102 | 0.0102 | | 0.0102 | 0.0102 | 0.0000 | 145.9572 | 145.9572 | 2.8000e-003 | 2.6800e-003 | 146.8245 |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 1.34429e +007 | 0.0725 | 0.6194 | 0.2636 | 3.9500e-003 | | 0.0501 | 0.0501 | | 0.0501 | 0.0501 | 0.0000 | 717.3643 | 717.3643 | 0.0138 | 0.0132 | 721.6272 |
| **Total** | | **0.0872** | **0.7455** | **0.3172** | **4.7500e-003** | | **0.0603** | **0.0603** | | **0.0603** | **0.0603** | **0.0000** | **863.3214** | **863.3214** | **0.0166** | **0.0158** | **868.4517** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Apartments Low Rise | 954214 | 125.5190 | 9.5200e-003 | 2.1600e-003 | 126.4020 |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 4.79212e +006 | 630.3647 | 0.0478 | 0.0109 | 634.7990 |
| **Total** | | **755.8837** | **0.0573** | **0.0130** | **761.2009** |

## 5.3 Energy by Land Use - Electricity

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Apartments Low Rise | 944298 | 124.2147 | 9.4200e-003 | 2.1400e-003 | 125.0884 |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 4.75399e+006 | 625.3484 | 0.0474 | 0.0108 | 629.7474 |
| **Total** | | **749.5631** | **0.0569** | **0.0129** | **754.8359** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 5.3287 | 0.3450 | 5.6763 | 2.0900e-003 | | 0.0536 | 0.0536 | | 0.0536 | 0.0536 | 0.0000 | 334.4476 | 334.4476 | 0.0149 | 5.9600e-003 | 336.5977 |
| Unmitigated | 9.0606 | 0.8043 | 33.8265 | 0.0939 | | 4.6458 | 4.6458 | | 4.6458 | 4.6458 | 614.8982 | 334.4476 | 949.3458 | 2.8894 | 5.9600e-003 | 1,023.3590 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 1.1157 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 4.6461 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 3.1326 | 0.7401 | 28.2698 | 0.0936 | | 4.6149 | 4.6149 | | 4.6149 | 4.6149 | 614.8982 | 325.3388 | 940.2369 | 2.8808 | 5.9600e-003 | 1,014.0333 |
| Landscaping | 0.1662 | 0.0641 | 5.5567 | 2.9000e-004 | | 0.0309 | 0.0309 | | 0.0309 | 0.0309 | 0.0000 | 9.1089 | 9.1089 | 8.6700e-003 | 0.0000 | 9.3257 |
| **Total** | **9.0606** | **0.8043** | **33.8265** | **0.0939** | | **4.6458** | **4.6458** | | **4.6458** | **4.6458** | **614.8982** | **334.4476** | **949.3458** | **2.8894** | **5.9600e-003** | **1,023.3590** |

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.4836 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 4.6461 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | 0.0329 | 0.2809 | 0.1195 | 1.7900e-003 | | 0.0227 | 0.0227 | | 0.0227 | 0.0227 | 0.0000 | 325.3388 | 325.3388 | 6.2400e-003 | 5.9600e-003 | 327.2721 |
| Landscaping | 0.1662 | 0.0641 | 5.5567 | 2.9000e-004 | | 0.0309 | 0.0309 | | 0.0309 | 0.0309 | 0.0000 | 9.1089 | 9.1089 | 8.6700e-003 | 0.0000 | 9.3257 |
| **Total** | **5.3287** | **0.3450** | **5.6763** | **2.0800e-003** | | **0.0536** | **0.0536** | | **0.0536** | **0.0536** | **0.0000** | **334.4476** | **334.4476** | **0.0149** | **5.9600e-003** | **336.5977** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 55.1093 | 1.2788 | 0.0309 | 96.2729 |
| Unmitigated | 68.8867 | 1.5985 | 0.0386 | 120.3411 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Apartments Low Rise | 13.2914 / 8.37937 | 17.5351 | 0.4341 | 0.0105 | 31.5038 |
| City Park | 0 / 9.4127 | 4.3336 | 3.3000e-004 | 7.0000e-005 | 4.3641 |
| Single Family Housing | 35.6393 / 22.4682 | 47.0180 | 1.1640 | 0.0280 | 84.4733 |
| **Total** | | **68.8867** | **1.5985** | **0.0386** | **120.3411** |

## 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Apartments Low Rise | 10.6331 / 6.7035 | 14.0281 | 0.3473 | 8.3600e-003 | 25.2030 |
| City Park | 0 / 7.53016 | 3.4669 | 2.6000e-004 | 6.0000e-005 | 3.4913 |
| Single Family Housing | 28.5114 / 17.9746 | 37.6144 | 0.9312 | 0.0224 | 67.5787 |
| **Total** | | **55.1093** | **1.2788** | **0.0309** | **96.2729** |

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 100.1091 | 5.9163 | 0.0000 | 248.0159 |
| Unmitigated | 133.4787 | 7.8884 | 0.0000 | 330.6879 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Apartments Low Rise | 93.84 | 19.0487 | 1.1257 | 0.0000 | 47.1923 |
| City Park | 0.68 | 0.1380 | 8.1600e-003 | 0.0000 | 0.3420 |
| Single Family Housing | 563.04 | 114.2920 | 6.7545 | 0.0000 | 283.1537 |
| **Total** | | **133.4787** | **7.8884** | **0.0000** | **330.6879** |

## 8.2 Waste by Land Use

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Apartments Low Rise | 70.38 | 14.2865 | 0.8443 | 0.0000 | 35.3942 |
| City Park | 0.51 | 0.1035 | 6.1200e-003 | 0.0000 | 0.2565 |
| Single Family Housing | 422.28 | 85.7190 | 5.0659 | 0.0000 | 212.3653 |
| **Total** | | **100.1091** | **5.9163** | **0.0000** | **248.0159** |

# 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

# 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

# CalEEMod Output

# Phase 1 Construction and Operations

# (Summer Daily)

# Lacey Ranch Master Plan Phase 1 Const and Ops

**Kings County, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Apartments Low Rise | 145.00 | Dwelling Unit | 7.26 | 145,000.00 | 415 |
| Single Family Housing | 125.00 | Dwelling Unit | 31.07 | 225,000.00 | 358 |

### 1.2 Other Project Characteristics

**Urbanization** Urban **Wind Speed (m/s)** 2.2 **Precipitation Freq (Days)** 37

**Climate Zone** 3 **Operational Year** 2022

**Utility Company** Pacific Gas & Electric Company

**CO2 Intensity (lb/MWhr)** 290 **CH4 Intensity (lb/MWhr)** 0.022 **N2O Intensity (lb/MWhr)** 0.005

### 1.3 User Entered Comments & Non-Default Data

Lacey Ranch Master Plan Phase 1 Const and Ops - Kings County, Summer

Project Characteristics - PG&E Intensity Factors

Land Use - Project acres

Construction Phase -

Architectural Coating - Rule 4601 Architectural Coatings compliance

Vehicle Trips - ITE 10th Ed Trip Gen SFR 9.44, 9.54, 8.55, Apt 7.32, 8.14, 6.28

Woodstoves - Rule 4901 Residential Woodburning hearths allowed 2 per acre

Area Coating - Rule 4601 Architectural Coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation - 2019 Title 24

Water Mitigation - CalGreen indoor water savings and MWELO outdoor savings

Waste Mitigation - Calrecycle 75% diversion mandate

Fleet Mix - SJVAPCD Residential Fleet Mix for 2022

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblArchitecturalCoating | EF_Residential_Exterior | 150.00 | 65.00 |
| tblArchitecturalCoating | EF_Residential_Interior | 150.00 | 65.00 |
| tblAreaCoating | Area_EF_Residential_Exterior | 150 | 65 |
| tblAreaCoating | Area_EF_Residential_Interior | 150 | 65 |
| tblFleetMix | HHD | 0.16 | 0.02 |
| tblFleetMix | HHD | 0.16 | 0.02 |
| tblFleetMix | LDA | 0.50 | 0.53 |
| tblFleetMix | LDA | 0.50 | 0.53 |
| tblFleetMix | LDT1 | 0.03 | 0.20 |
| tblFleetMix | LDT1 | 0.03 | 0.20 |
| tblFleetMix | LDT2 | 0.15 | 0.17 |

| | | | |
|---|---|---|---|
| tblFleetMix | LDT2 | 0.15 | 0.17 |
| tblFleetMix | LHD1 | 0.02 | 1.3000e-003 |
| tblFleetMix | LHD1 | 0.02 | 1.3000e-003 |
| tblFleetMix | LHD2 | 4.3940e-003 | 9.0000e-004 |
| tblFleetMix | LHD2 | 4.3940e-003 | 9.0000e-004 |
| tblFleetMix | MCY | 5.6650e-003 | 2.5000e-003 |
| tblFleetMix | MCY | 5.6650e-003 | 2.5000e-003 |
| tblFleetMix | MDV | 0.12 | 0.05 |
| tblFleetMix | MDV | 0.12 | 0.05 |
| tblFleetMix | MH | 6.9000e-004 | 1.8000e-003 |
| tblFleetMix | MH | 6.9000e-004 | 1.8000e-003 |
| tblFleetMix | MHD | 0.01 | 8.6000e-003 |
| tblFleetMix | MHD | 0.01 | 8.6000e-003 |
| tblFleetMix | OBUS | 1.7250e-003 | 0.00 |
| tblFleetMix | OBUS | 1.7250e-003 | 0.00 |
| tblFleetMix | SBUS | 9.4300e-004 | 7.0000e-004 |
| tblFleetMix | SBUS | 9.4300e-004 | 7.0000e-004 |
| tblFleetMix | UBUS | 1.7700e-003 | 4.4000e-003 |
| tblFleetMix | UBUS | 1.7700e-003 | 4.0000e-003 |
| tblLandUse | LotAcreage | 9.06 | 7.26 |
| tblLandUse | LotAcreage | 40.58 | 31.07 |
| tblProjectCharacteristics | CH4IntensityFactor | 0.029 | 0.022 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 290 |
| tblProjectCharacteristics | N2OIntensityFactor | 0.006 | 0.005 |
| tblVehicleTrips | ST_TR | 7.16 | 8.14 |
| tblVehicleTrips | ST_TR | 9.91 | 9.54 |
| tblVehicleTrips | SU_TR | 6.07 | 6.28 |

| | | | |
|---|---|---|---|
| tblVehicleTrips | SU_TR | 8.62 | 8.55 |
| tblVehicleTrips | WD_TR | 6.59 | 7.32 |
| tblVehicleTrips | WD_TR | 9.52 | 9.44 |

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2022 | 3.7095 | 38.8945 | 29.6614 | 0.0636 | 18.2141 | 1.6359 | 19.8276 | 9.9699 | 1.5050 | 11.4543 | 0.0000 | 6,165.461 0 | 6,165.461 0 | 1.9491 | 0.0000 | 6,214.188 9 |
| 2023 | 2.2210 | 16.9879 | 20.8837 | 0.0461 | 1.4207 | 0.7095 | 2.1301 | 0.3813 | 0.6675 | 1.0488 | 0.0000 | 4,506.942 2 | 4,506.942 2 | 0.6980 | 0.0000 | 4,524.391 4 |
| 2024 | 2.0788 | 15.9892 | 20.4539 | 0.0457 | 1.4207 | 0.6228 | 2.0435 | 0.3813 | 0.5858 | 0.9671 | 0.0000 | 4,460.421 7 | 4,460.421 7 | 0.6923 | 0.0000 | 4,477.730 3 |
| 2025 | 54.9963 | 14.9617 | 20.0380 | 0.0452 | 1.4207 | 0.5369 | 1.9576 | 0.3813 | 0.5049 | 0.8863 | 0.0000 | 4,413.237 1 | 4,413.237 1 | 0.7163 | 0.0000 | 4,430.410 2 |
| **Maximum** | **54.9963** | **38.8945** | **29.6614** | **0.0636** | **18.2141** | **1.6359** | **19.8276** | **9.9699** | **1.5050** | **11.4543** | **0.0000** | **6,165.461 0** | **6,165.461 0** | **1.9491** | **0.0000** | **6,214.188 9** |

## 2.1 Overall Construction (Maximum Daily Emission)

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2022 | 3.7095 | 38.8945 | 29.6614 | 0.0636 | 8.2777 | 1.6359 | 9.8912 | 4.5080 | 1.5050 | 5.9925 | 0.0000 | 6,165.4610 | 6,165.4610 | 1.9491 | 0.0000 | 6,214.1889 |
| 2023 | 2.2210 | 16.9879 | 20.8837 | 0.0461 | 1.4207 | 0.7095 | 2.1301 | 0.3813 | 0.6675 | 1.0488 | 0.0000 | 4,506.9422 | 4,506.9422 | 0.6980 | 0.0000 | 4,524.3914 |
| 2024 | 2.0788 | 15.9892 | 20.4539 | 0.0457 | 1.4207 | 0.6228 | 2.0435 | 0.3813 | 0.5858 | 0.9671 | 0.0000 | 4,460.4217 | 4,460.4217 | 0.6923 | 0.0000 | 4,477.7303 |
| 2025 | 54.9963 | 14.9617 | 20.0380 | 0.0452 | 1.4207 | 0.5369 | 1.9576 | 0.3813 | 0.5049 | 0.8863 | 0.0000 | 4,413.2371 | 4,413.2371 | 0.7163 | 0.0000 | 4,430.4102 |
| **Maximum** | **54.9963** | **38.8945** | **29.6614** | **0.0636** | **8.2777** | **1.6359** | **9.8912** | **4.5080** | **1.5050** | **5.9925** | **0.0000** | **6,165.4610** | **6,165.4610** | **1.9491** | **0.0000** | **6,214.1889** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **44.21** | **0.00** | **38.28** | **49.14** | **0.00** | **38.04** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 28.7568 | 5.5431 | 196.3720 | 0.5814 | | 28.5482 | 28.5482 | | 28.5482 | 28.5482 | 4,166.1337 | 3,184.8150 | 7,350.9487 | 19.5748 | 0.0577 | 7,857.4992 |
| Energy | 0.1571 | 1.3427 | 0.5714 | 8.5700e-003 | | 0.1086 | 0.1086 | | 0.1086 | 0.1086 | | 1,714.0827 | 1,714.0827 | 0.0329 | 0.0314 | 1,724.2687 |
| Mobile | 5.3617 | 14.8785 | 57.5317 | 0.1576 | 14.3552 | 0.1316 | 14.4868 | 3.8302 | 0.1228 | 3.9530 | | 15,888.3177 | 15,888.3177 | 0.8860 | | 15,910.4688 |
| **Total** | **34.2756** | **21.7643** | **254.4750** | **0.7476** | **14.3552** | **28.7883** | **43.1435** | **3.8302** | **28.7795** | **32.6098** | **4,166.1337** | **20,787.2155** | **24,953.3492** | **20.4937** | **0.0891** | **25,492.2367** |

### Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 9.7044 | 2.7205 | 23.3476 | 0.0169 | | 0.3224 | 0.3224 | | 0.3224 | 0.3224 | 0.0000 | 3,184.8150 | 3,184.8150 | 0.0990 | 0.0577 | 3,204.4698 |
| Energy | 0.1482 | 1.2665 | 0.5389 | 8.0800e-003 | | 0.1024 | 0.1024 | | 0.1024 | 0.1024 | | 1,616.7770 | 1,616.7770 | 0.0310 | 0.0296 | 1,626.3846 |
| Mobile | 5.2640 | 14.2997 | 54.2179 | 0.1475 | 13.3647 | 0.1236 | 13.4882 | 3.5660 | 0.1153 | 3.6812 | | 14,865.1282 | 14,865.1282 | 0.8475 | | 14,886.3155 |
| **Total** | **15.1166** | **18.2867** | **78.1044** | **0.1725** | **13.3647** | **0.5483** | **13.9130** | **3.5660** | **0.5401** | **4.1060** | **0.0000** | **19,666.7202** | **19,666.7202** | **0.9775** | **0.0873** | **19,717.1699** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **55.90** | **15.98** | **69.31** | **76.93** | **6.90** | **98.10** | **67.75** | **6.90** | **98.12** | **87.41** | **100.00** | **5.39** | **21.19** | **95.23** | **2.00** | **22.65** |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 1/1/2022 | 2/11/2022 | 5 | 30 | |
| 2 | Grading | Grading | 2/12/2022 | 5/27/2022 | 5 | 75 | |
| 3 | Building Construction | Building Construction | 5/28/2022 | 3/28/2025 | 5 | 740 | |
| 4 | Paving | Paving | 3/29/2025 | 6/13/2025 | 5 | 55 | |
| 5 | Architectural Coating | Architectural Coating | 6/14/2025 | 8/29/2025 | 5 | 55 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 187.5**

**Acres of Paving: 0**

**Residential Indoor: 749,250; Residential Outdoor: 249,750; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 149.00 | 29.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 30.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

## 3.2 Site Preparation - 2022

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.1701 | 33.0835 | 19.6978 | 0.0380 | | 1.6126 | 1.6126 | | 1.4836 | 1.4836 | | 3,686.0619 | 3,686.0619 | 1.1922 | | 3,715.8655 |
| **Total** | **3.1701** | **33.0835** | **19.6978** | **0.0380** | **18.0663** | **1.6126** | **19.6788** | **9.9307** | **1.4836** | **11.4143** | | **3,686.0619** | **3,686.0619** | **1.1922** | | **3,715.8655** |

## 3.2 Site Preparation - 2022

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0762 | 0.0459 | 0.5579 | 1.3900e-003 | 0.1479 | 9.2000e-004 | 0.1488 | 0.0392 | 8.5000e-004 | 0.0401 | | 138.6455 | 138.6455 | 4.4100e-003 | | 138.7557 |
| **Total** | **0.0762** | **0.0459** | **0.5579** | **1.3900e-003** | **0.1479** | **9.2000e-004** | **0.1488** | **0.0392** | **8.5000e-004** | **0.0401** | | **138.6455** | **138.6455** | **4.4100e-003** | | **138.7557** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.1298 | 0.0000 | 8.1298 | 4.4688 | 0.0000 | 4.4688 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.1701 | 33.0835 | 19.6978 | 0.0380 | | 1.6126 | 1.6126 | | 1.4836 | 1.4836 | 0.0000 | 3,686.0619 | 3,686.0619 | 1.1922 | | 3,715.8655 |
| **Total** | **3.1701** | **33.0835** | **19.6978** | **0.0380** | **8.1298** | **1.6126** | **9.7424** | **4.4688** | **1.4836** | **5.9524** | **0.0000** | **3,686.0619** | **3,686.0619** | **1.1922** | | **3,715.8655** |

## 3.2 Site Preparation - 2022

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0762 | 0.0459 | 0.5579 | 1.3900e-003 | 0.1479 | 9.2000e-004 | 0.1488 | 0.0392 | 8.5000e-004 | 0.0401 | | 138.6455 | 138.6455 | 4.4100e-003 | | 138.7557 |
| **Total** | **0.0762** | **0.0459** | **0.5579** | **1.3900e-003** | **0.1479** | **9.2000e-004** | **0.1488** | **0.0392** | **8.5000e-004** | **0.0401** | | **138.6455** | **138.6455** | **4.4100e-003** | | **138.7557** |

## 3.3 Grading - 2022

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.6248 | 38.8435 | 29.0415 | 0.0621 | | 1.6349 | 1.6349 | | 1.5041 | 1.5041 | | 6,011.4105 | 6,011.4105 | 1.9442 | | 6,060.0158 |
| **Total** | **3.6248** | **38.8435** | **29.0415** | **0.0621** | **8.6733** | **1.6349** | **10.3082** | **3.5965** | **1.5041** | **5.1006** | | **6,011.4105** | **6,011.4105** | **1.9442** | | **6,060.0158** |

## 3.3 Grading - 2022

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0847 | 0.0510 | 0.6199 | 1.5500e-003 | 0.1643 | 1.0200e-003 | 0.1653 | 0.0436 | 9.4000e-004 | 0.0445 | | 154.0505 | 154.0505 | 4.9000e-003 | | 154.1731 |
| **Total** | **0.0847** | **0.0510** | **0.6199** | **1.5500e-003** | **0.1643** | **1.0200e-003** | **0.1653** | **0.0436** | **9.4000e-004** | **0.0445** | | **154.0505** | **154.0505** | **4.9000e-003** | | **154.1731** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 3.9030 | 0.0000 | 3.9030 | 1.6184 | 0.0000 | 1.6184 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.6248 | 38.8435 | 29.0415 | 0.0621 | | 1.6349 | 1.6349 | | 1.5041 | 1.5041 | 0.0000 | 6,011.4105 | 6,011.4105 | 1.9442 | | 6,060.0158 |
| **Total** | **3.6248** | **38.8435** | **29.0415** | **0.0621** | **3.9030** | **1.6349** | **5.5379** | **1.6184** | **1.5041** | **3.1225** | **0.0000** | **6,011.4105** | **6,011.4105** | **1.9442** | | **6,060.0158** |

## 3.3 Grading - 2022

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0847 | 0.0510 | 0.6199 | 1.5500e-003 | 0.1643 | 1.0200e-003 | 0.1653 | 0.0436 | 9.4000e-004 | 0.0445 | | 154.0505 | 154.0505 | 4.9000e-003 | | 154.1731 |
| **Total** | **0.0847** | **0.0510** | **0.6199** | **1.5500e-003** | **0.1643** | **1.0200e-003** | **0.1653** | **0.0436** | **9.4000e-004** | **0.0445** | | **154.0505** | **154.0505** | **4.9000e-003** | | **154.1731** |

## 3.4 Building Construction - 2022

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.7062 | 15.6156 | 16.3634 | 0.0269 | | 0.8090 | 0.8090 | | 0.7612 | 0.7612 | | 2,554.3336 | 2,554.3336 | 0.6120 | | 2,569.6322 |
| **Total** | **1.7062** | **15.6156** | **16.3634** | **0.0269** | | **0.8090** | **0.8090** | | **0.7612** | **0.7612** | | **2,554.3336** | **2,554.3336** | **0.6120** | | **2,569.6322** |

## 3.4 Building Construction - 2022

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0919 | 2.9880 | 0.5370 | 8.2900e-003 | 0.1967 | 8.3400e-003 | 0.2050 | 0.0566 | 7.9800e-003 | 0.0646 | | 867.2264 | 867.2264 | 0.0869 | | 869.3988 |
| Worker | 0.6310 | 0.3802 | 4.6180 | 0.0115 | 1.2240 | 7.6400e-003 | 1.2316 | 0.3247 | 7.0300e-003 | 0.3317 | | 1,147.6763 | 1,147.6763 | 0.0365 | | 1,148.5892 |
| **Total** | **0.7228** | **3.3682** | **5.1550** | **0.0198** | **1.4207** | **0.0160** | **1.4367** | **0.3813** | **0.0150** | **0.3963** | | **2,014.9026** | **2,014.9026** | **0.1234** | | **2,017.9880** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.7062 | 15.6156 | 16.3634 | 0.0269 | | 0.8090 | 0.8090 | | 0.7612 | 0.7612 | 0.0000 | 2,554.3336 | 2,554.3336 | 0.6120 | | 2,569.6322 |
| **Total** | **1.7062** | **15.6156** | **16.3634** | **0.0269** | | **0.8090** | **0.8090** | | **0.7612** | **0.7612** | **0.0000** | **2,554.3336** | **2,554.3336** | **0.6120** | | **2,569.6322** |

## 3.4 Building Construction - 2022

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0919 | 2.9880 | 0.5370 | 8.2900e-003 | 0.1967 | 8.3400e-003 | 0.2050 | 0.0566 | 7.9800e-003 | 0.0646 | | 867.2264 | 867.2264 | 0.0869 | | 869.3988 |
| Worker | 0.6310 | 0.3802 | 4.6180 | 0.0115 | 1.2240 | 7.6400e-003 | 1.2316 | 0.3247 | 7.0300e-003 | 0.3317 | | 1,147.6763 | 1,147.6763 | 0.0365 | | 1,148.5892 |
| **Total** | **0.7228** | **3.3682** | **5.1550** | **0.0198** | **1.4207** | **0.0160** | **1.4367** | **0.3813** | **0.0150** | **0.3963** | | **2,014.9026** | **2,014.9026** | **0.1234** | | **2,017.9880** |

## 3.4 Building Construction - 2023

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.5728 | 14.3849 | 16.2440 | 0.0269 | | 0.6997 | 0.6997 | | 0.6584 | 0.6584 | | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **1.5728** | **14.3849** | **16.2440** | **0.0269** | | **0.6997** | **0.6997** | | **0.6584** | **0.6584** | | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

## 3.4 Building Construction - 2023

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0635 | 2.2631 | 0.4465 | 8.0900e-003 | 0.1967 | 2.3000e-003 | 0.1990 | 0.0566 | 2.2000e-003 | 0.0588 | | 846.5035 | 846.5035 | 0.0578 | | 847.9490 |
| Worker | 0.5847 | 0.3399 | 4.1932 | 0.0111 | 1.2240 | 7.4100e-003 | 1.2314 | 0.3247 | 6.8300e-003 | 0.3315 | | 1,105.2287 | 1,105.2287 | 0.0323 | | 1,106.0364 |
| **Total** | **0.6482** | **2.6031** | **4.6397** | **0.0192** | **1.4207** | **9.7100e-003** | **1.4304** | **0.3813** | **9.0300e-003** | **0.3903** | | **1,951.7323** | **1,951.7323** | **0.0901** | | **1,953.9854** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.5728 | 14.3849 | 16.2440 | 0.0269 | | 0.6997 | 0.6997 | | 0.6584 | 0.6584 | 0.0000 | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **1.5728** | **14.3849** | **16.2440** | **0.0269** | | **0.6997** | **0.6997** | | **0.6584** | **0.6584** | **0.0000** | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

## 3.4 Building Construction - 2023

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0635 | 2.2631 | 0.4465 | 8.0900e-003 | 0.1967 | 2.3000e-003 | 0.1990 | 0.0566 | 2.2000e-003 | 0.0588 | | 846.5035 | 846.5035 | 0.0578 | | 847.9490 |
| Worker | 0.5847 | 0.3399 | 4.1932 | 0.0111 | 1.2240 | 7.4100e-003 | 1.2314 | 0.3247 | 6.8300e-003 | 0.3315 | | 1,105.2287 | 1,105.2287 | 0.0323 | | 1,106.0364 |
| **Total** | **0.6482** | **2.6031** | **4.6397** | **0.0192** | **1.4207** | **9.7100e-003** | **1.4304** | **0.3813** | **9.0300e-003** | **0.3903** | | **1,951.7323** | **1,951.7323** | **0.0901** | | **1,953.9854** |

## 3.4 Building Construction - 2024

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4716 | 13.4438 | 16.1668 | 0.0270 | | 0.6133 | 0.6133 | | 0.5769 | 0.5769 | | 2,555.6989 | 2,555.6989 | 0.6044 | | 2,570.8077 |
| **Total** | **1.4716** | **13.4438** | **16.1668** | **0.0270** | | **0.6133** | **0.6133** | | **0.5769** | **0.5769** | | **2,555.6989** | **2,555.6989** | **0.6044** | | **2,570.8077** |

## 3.4 Building Construction - 2024

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0617 | 2.2393 | 0.4223 | 8.0300e-003 | 0.1967 | 2.2800e-003 | 0.1990 | 0.0566 | 2.1800e-003 | 0.0588 | | 839.5895 | 839.5895 | 0.0590 | | 841.0653 |
| Worker | 0.5456 | 0.3061 | 3.8648 | 0.0107 | 1.2240 | 7.2600e-003 | 1.2313 | 0.3247 | 6.6800e-003 | 0.3313 | | 1,065.1333 | 1,065.1333 | 0.0290 | | 1,065.8574 |
| **Total** | **0.6073** | **2.5454** | **4.2870** | **0.0187** | **1.4207** | **9.5400e-003** | **1.4302** | **0.3813** | **8.8600e-003** | **0.3902** | | **1,904.7228** | **1,904.7228** | **0.0880** | | **1,906.9226** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4716 | 13.4438 | 16.1668 | 0.0270 | | 0.6133 | 0.6133 | | 0.5769 | 0.5769 | 0.0000 | 2,555.6989 | 2,555.6989 | 0.6044 | | 2,570.8077 |
| **Total** | **1.4716** | **13.4438** | **16.1668** | **0.0270** | | **0.6133** | **0.6133** | | **0.5769** | **0.5769** | **0.0000** | **2,555.6989** | **2,555.6989** | **0.6044** | | **2,570.8077** |

## 3.4 Building Construction - 2024

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0617 | 2.2393 | 0.4223 | 8.0300e-003 | 0.1967 | 2.2800e-003 | 0.1990 | 0.0566 | 2.1800e-003 | 0.0588 | | 839.5895 | 839.5895 | 0.0590 | | 841.0653 |
| Worker | 0.5456 | 0.3061 | 3.8648 | 0.0107 | 1.2240 | 7.2600e-003 | 1.2313 | 0.3247 | 6.6800e-003 | 0.3313 | | 1,065.1333 | 1,065.1333 | 0.0290 | | 1,065.8574 |
| **Total** | **0.6073** | **2.5454** | **4.2870** | **0.0187** | **1.4207** | **9.5400e-003** | **1.4302** | **0.3813** | **8.8600e-003** | **0.3902** | | **1,904.7228** | **1,904.7228** | **0.0880** | | **1,906.9226** |

## 3.4 Building Construction - 2025

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

## 3.4 Building Construction - 2025

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0600 | 2.2155 | 0.4016 | 7.9700e-003 | 0.1967 | 2.2600e-003 | 0.1989 | 0.0566 | 2.1600e-003 | 0.0588 | | 833.2526 | 833.2526 | 0.0601 | | 834.7545 |
| Worker | 0.5110 | 0.2766 | 3.5518 | 0.0103 | 1.2240 | 7.0900e-003 | 1.2311 | 0.3247 | 6.5300e-003 | 0.3312 | | 1,023.5101 | 1,023.5101 | 0.0259 | | 1,024.1576 |
| **Total** | **0.5710** | **2.4920** | **3.9534** | **0.0182** | **1.4207** | **9.3500e-003** | **1.4300** | **0.3813** | **8.6900e-003** | **0.3900** | | **1,856.7628** | **1,856.7628** | **0.0860** | | **1,858.9122** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

## 3.4 Building Construction - 2025

**Mitigated Construction Off-Site**

| Category | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0600 | 2.2155 | 0.4016 | 7.9700e-003 | 0.1967 | 2.2600e-003 | 0.1989 | 0.0566 | 2.1600e-003 | 0.0588 | | 833.2526 | 833.2526 | 0.0601 | | 834.7545 |
| Worker | 0.5110 | 0.2766 | 3.5518 | 0.0103 | 1.2240 | 7.0900e-003 | 1.2311 | 0.3247 | 6.5300e-003 | 0.3312 | | 1,023.5101 | 1,023.5101 | 0.0259 | | 1,024.1576 |
| **Total** | **0.5710** | **2.4920** | **3.9534** | **0.0182** | **1.4207** | **9.3500e-003** | **1.4300** | **0.3813** | **8.6900e-003** | **0.3900** | | **1,856.7628** | **1,856.7628** | **0.0860** | | **1,858.9122** |

## 3.5 Paving - 2025

**Unmitigated Construction On-Site**

| Category | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.9152 | 8.5816 | 14.5780 | 0.0228 | | 0.4185 | 0.4185 | | 0.3850 | 0.3850 | | 2,206.7452 | 2,206.7452 | 0.7137 | | 2,224.5878 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **0.9152** | **8.5816** | **14.5780** | **0.0228** | | **0.4185** | **0.4185** | | **0.3850** | **0.3850** | | **2,206.7452** | **2,206.7452** | **0.7137** | | **2,224.5878** |

## 3.5 Paving - 2025

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0515 | 0.0278 | 0.3576 | 1.0300e-003 | 0.1232 | 7.1000e-004 | 0.1239 | 0.0327 | 6.6000e-004 | 0.0333 | | 103.0379 | 103.0379 | 2.6100e-003 | | 103.1031 |
| **Total** | **0.0515** | **0.0278** | **0.3576** | **1.0300e-003** | **0.1232** | **7.1000e-004** | **0.1239** | **0.0327** | **6.6000e-004** | **0.0333** | | **103.0379** | **103.0379** | **2.6100e-003** | | **103.1031** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.9152 | 8.5816 | 14.5780 | 0.0228 | | 0.4185 | 0.4185 | | 0.3850 | 0.3850 | 0.0000 | 2,206.7452 | 2,206.7452 | 0.7137 | | 2,224.5878 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **0.9152** | **8.5816** | **14.5780** | **0.0228** | | **0.4185** | **0.4185** | | **0.3850** | **0.3850** | **0.0000** | **2,206.7452** | **2,206.7452** | **0.7137** | | **2,224.5878** |

## 3.5 Paving - 2025

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0515 | 0.0278 | 0.3576 | 1.0300e-003 | 0.1232 | 7.1000e-004 | 0.1239 | 0.0327 | 6.6000e-004 | 0.0333 | | 103.0379 | 103.0379 | 2.6100e-003 | | 103.1031 |
| **Total** | **0.0515** | **0.0278** | **0.3576** | **1.0300e-003** | **0.1232** | **7.1000e-004** | **0.1239** | **0.0327** | **6.6000e-004** | **0.0333** | | **103.0379** | **103.0379** | **2.6100e-003** | | **103.1031** |

## 3.6 Architectural Coating - 2025

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 54.7225 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **54.8934** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

## 3.6 Architectural Coating - 2025

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.1029 | 0.0557 | 0.7151 | 2.0700e-003 | 0.2464 | 1.4300e-003 | 0.2479 | 0.0654 | 1.3100e-003 | 0.0667 | | 206.0759 | 206.0759 | 5.2100e-003 | | 206.2062 |
| **Total** | **0.1029** | **0.0557** | **0.7151** | **2.0700e-003** | **0.2464** | **1.4300e-003** | **0.2479** | **0.0654** | **1.3100e-003** | **0.0667** | | **206.0759** | **206.0759** | **5.2100e-003** | | **206.2062** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 54.7225 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **54.8934** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

## 3.6 Architectural Coating - 2025

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.1029 | 0.0557 | 0.7151 | 2.0700e-003 | 0.2464 | 1.4300e-003 | 0.2479 | 0.0654 | 1.3100e-003 | 0.0667 | | 206.0759 | 206.0759 | 5.2100e-003 | | 206.2062 |
| **Total** | **0.1029** | **0.0557** | **0.7151** | **2.0700e-003** | **0.2464** | **1.4300e-003** | **0.2479** | **0.0654** | **1.3100e-003** | **0.0667** | | **206.0759** | **206.0759** | **5.2100e-003** | | **206.2062** |

# 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

| Category | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 5.2640 | 14.2997 | 54.2179 | 0.1475 | 13.3647 | 0.1236 | 13.4882 | 3.5660 | 0.1153 | 3.6812 | | 14,865.1282 | 14,865.1282 | 0.8475 | | 14,886.3155 |
| Unmitigated | 5.3617 | 14.8785 | 57.5317 | 0.1576 | 14.3552 | 0.1316 | 14.4868 | 3.8302 | 0.1228 | 3.9530 | | 15,888.3177 | 15,888.3177 | 0.8860 | | 15,910.4688 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Apartments Low Rise | 1,061.40 | 1,180.30 | 910.60 | 3,024,947 | 2,816,226 |
| Single Family Housing | 1,180.00 | 1,192.50 | 1068.75 | 3,337,076 | 3,106,817 |
| Total | 2,241.40 | 2,372.80 | 1,979.35 | 6,362,023 | 5,923,043 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Apartments Low Rise | 10.80 | 7.30 | 7.50 | 42.30 | 19.60 | 38.10 | 86 | 11 | 3 |
| Single Family Housing | 10.80 | 7.30 | 7.50 | 42.30 | 19.60 | 38.10 | 86 | 11 | 3 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Low Rise | 0.534300 | 0.203000 | 0.167300 | 0.054500 | 0.001300 | 0.000900 | 0.008600 | 0.020700 | 0.000000 | 0.004400 | 0.002500 | 0.000700 | 0.001800 |
| Single Family Housing | 0.534300 | 0.203000 | 0.167300 | 0.054500 | 0.001300 | 0.000900 | 0.008600 | 0.020700 | 0.000000 | 0.004000 | 0.002500 | 0.000700 | 0.001800 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.1482 | 1.2665 | 0.5389 | 8.0800e-003 | | 0.1024 | 0.1024 | | 0.1024 | 0.1024 | | 1,616.7770 | 1,616.7770 | 0.0310 | 0.0296 | 1,626.3846 |
| NaturalGas Unmitigated | 0.1571 | 1.3427 | 0.5714 | 8.5700e-003 | | 0.1086 | 0.1086 | | 0.1086 | 0.1086 | | 1,714.0827 | 1,714.0827 | 0.0329 | 0.0314 | 1,724.2687 |

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| Apartments Low Rise | 5615.85 | 0.0606 | 0.5175 | 0.2202 | 3.3000e-003 | | 0.0418 | 0.0418 | | 0.0418 | 0.0418 | | 660.6887 | 660.6887 | 0.0127 | 0.0121 | 664.6149 |
| Single Family Housing | 8953.85 | 0.0966 | 0.8252 | 0.3511 | 5.2700e-003 | | 0.0667 | 0.0667 | | 0.0667 | 0.0667 | | 1,053.3940 | 1,053.3940 | 0.0202 | 0.0193 | 1,059.6538 |
| **Total** | | **0.1571** | **1.3427** | **0.5714** | **8.5700e-003** | | **0.1086** | **0.1086** | | **0.1086** | **0.1086** | | **1,714.0827** | **1,714.0827** | **0.0329** | **0.0314** | **1,724.2687** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| Apartments Low Rise | 5.32627 | 0.0574 | 0.4909 | 0.2089 | 3.1300e-003 | | 0.0397 | 0.0397 | | 0.0397 | 0.0397 | | 626.6205 | 626.6205 | 0.0120 | 0.0115 | 630.3442 |
| Single Family Housing | 8.41633 | 0.0908 | 0.7756 | 0.3301 | 4.9500e-003 | | 0.0627 | 0.0627 | | 0.0627 | 0.0627 | | 990.1565 | 990.1565 | 0.0190 | 0.0182 | 996.0405 |
| **Total** | | **0.1482** | **1.2665** | **0.5389** | **8.0800e-003** | | **0.1024** | **0.1024** | | **0.1024** | **0.1024** | | **1,616.7769** | **1,616.7769** | **0.0310** | **0.0296** | **1,626.3847** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 9.7044 | 2.7205 | 23.3476 | 0.0169 | | 0.3224 | 0.3224 | | 0.3224 | 0.3224 | 0.0000 | 3,184.8150 | 3,184.8150 | 0.0990 | 0.0577 | 3,204.4698 |
| Unmitigated | 28.7568 | 5.5431 | 196.3720 | 0.5814 | | 28.5482 | 28.5482 | | 28.5482 | 28.5482 | 4,166.1337 | 3,184.8150 | 7,350.9487 | 19.5748 | 0.0577 | 7,857.4992 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.8246 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 7.9180 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 19.3407 | 5.2859 | 174.0726 | 0.5802 | | 28.4250 | 28.4250 | | 28.4250 | 28.4250 | 4,166.1337 | 3,144.7059 | 7,310.8396 | 19.5361 | 0.0577 | 7,816.4227 |
| Landscaping | 0.6735 | 0.2572 | 22.2993 | 1.1800e-003 | | 0.1232 | 0.1232 | | 0.1232 | 0.1232 | | 40.1091 | 40.1091 | 0.0387 | | 41.0765 |
| **Total** | **28.7568** | **5.5431** | **196.3719** | **0.5814** | | **28.5482** | **28.5482** | | **28.5482** | **28.5482** | **4,166.1337** | **3,184.8150** | **7,350.9487** | **19.5748** | **0.0577** | **7,857.4992** |

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.8246 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 7.9180 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.2883 | 2.4634 | 1.0482 | 0.0157 | | 0.1992 | 0.1992 | | 0.1992 | 0.1992 | 0.0000 | 3,144.705 9 | 3,144.705 9 | 0.0603 | 0.0577 | 3,163.393 3 |
| Landscaping | 0.6735 | 0.2572 | 22.2993 | 1.1800e-003 | | 0.1232 | 0.1232 | | 0.1232 | 0.1232 | | 40.1091 | 40.1091 | 0.0387 | | 41.0765 |
| **Total** | **9.7044** | **2.7205** | **23.3476** | **0.0169** | | **0.3224** | **0.3224** | | **0.3224** | **0.3224** | **0.0000** | **3,184.815 0** | **3,184.815 0** | **0.0990** | **0.0577** | **3,204.469 8** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

# 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

### Fire Pumps and Emergency Generators

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

### Boilers

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

### User Defined Equipment

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

# CalEEMod Output

# Phase 1 Construction and Operations

# (Winter Daily)

# Lacey Ranch Master Plan Phase 1 Const and Ops

**Kings County, Winter**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Apartments Low Rise | 145.00 | Dwelling Unit | 7.26 | 145,000.00 | 415 |
| Single Family Housing | 125.00 | Dwelling Unit | 31.07 | 225,000.00 | 358 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 37 |
| **Climate Zone** | 3 | | | **Operational Year** | 2022 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 290 | **CH4 Intensity (lb/MWhr)** | 0.022 | **N2O Intensity (lb/MWhr)** | 0.005 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E Intensity Factors

Land Use - Project acres

Construction Phase -

Architectural Coating - Rule 4601 Architectural Coatings compliance

Vehicle Trips - ITE 10th Ed Trip Gen SFR 9.44, 9.54, 8.55, Apt 7.32, 8.14, 6.28

Woodstoves - Rule 4901 Residential Woodburning hearths allowed 2 per acre

Area Coating - Rule 4601 Architectural Coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation - 2019 Title 24

Water Mitigation - CalGreen indoor water savings and MWELO outdoor savings

Waste Mitigation - Calrecycle 75% diversion mandate

Fleet Mix - SJVAPCD Residential Fleet Mix for 2022

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblArchitecturalCoating | EF_Residential_Exterior | 150.00 | 65.00 |
| tblArchitecturalCoating | EF_Residential_Interior | 150.00 | 65.00 |
| tblAreaCoating | Area_EF_Residential_Exterior | 150 | 65 |
| tblAreaCoating | Area_EF_Residential_Interior | 150 | 65 |
| tblFleetMix | HHD | 0.16 | 0.02 |
| tblFleetMix | HHD | 0.16 | 0.02 |
| tblFleetMix | LDA | 0.50 | 0.53 |
| tblFleetMix | LDA | 0.50 | 0.53 |
| tblFleetMix | LDT1 | 0.03 | 0.20 |
| tblFleetMix | LDT1 | 0.03 | 0.20 |
| tblFleetMix | LDT2 | 0.15 | 0.17 |

| | | | |
|---|---|---|---|
| tblFleetMix | LDT2 | 0.15 | 0.17 |
| tblFleetMix | LHD1 | 0.02 | 1.3000e-003 |
| tblFleetMix | LHD1 | 0.02 | 1.3000e-003 |
| tblFleetMix | LHD2 | 4.3940e-003 | 9.0000e-004 |
| tblFleetMix | LHD2 | 4.3940e-003 | 9.0000e-004 |
| tblFleetMix | MCY | 5.6650e-003 | 2.5000e-003 |
| tblFleetMix | MCY | 5.6650e-003 | 2.5000e-003 |
| tblFleetMix | MDV | 0.12 | 0.05 |
| tblFleetMix | MDV | 0.12 | 0.05 |
| tblFleetMix | MH | 6.9000e-004 | 1.8000e-003 |
| tblFleetMix | MH | 6.9000e-004 | 1.8000e-003 |
| tblFleetMix | MHD | 0.01 | 8.6000e-003 |
| tblFleetMix | MHD | 0.01 | 8.6000e-003 |
| tblFleetMix | OBUS | 1.7250e-003 | 0.00 |
| tblFleetMix | OBUS | 1.7250e-003 | 0.00 |
| tblFleetMix | SBUS | 9.4300e-004 | 7.0000e-004 |
| tblFleetMix | SBUS | 9.4300e-004 | 7.0000e-004 |
| tblFleetMix | UBUS | 1.7700e-003 | 4.4000e-003 |
| tblFleetMix | UBUS | 1.7700e-003 | 4.0000e-003 |
| tblLandUse | LotAcreage | 9.06 | 7.26 |
| tblLandUse | LotAcreage | 40.58 | 31.07 |
| tblProjectCharacteristics | CH4IntensityFactor | 0.029 | 0.022 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 290 |
| tblProjectCharacteristics | N2OIntensityFactor | 0.006 | 0.005 |
| tblVehicleTrips | ST_TR | 7.16 | 8.14 |
| tblVehicleTrips | ST_TR | 9.91 | 9.54 |
| tblVehicleTrips | SU_TR | 6.07 | 6.28 |

| | | | |
|---|---|---|---|
| tblVehicleTrips | SU_TR | 8.62 | 8.55 |
| tblVehicleTrips | WD_TR | 6.59 | 7.32 |
| tblVehicleTrips | WD_TR | 9.52 | 9.44 |

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2022 | 3.7048 | 38.9039 | 29.5638 | 0.0634 | 18.2141 | 1.6359 | 19.8276 | 9.9699 | 1.5050 | 11.4543 | 0.0000 | 6,146.4062 | 6,146.4062 | 1.9485 | 0.0000 | 6,195.1180 |
| 2023 | 2.1941 | 17.0617 | 20.2818 | 0.0445 | 1.4207 | 0.7095 | 2.1302 | 0.3813 | 0.6675 | 1.0488 | 0.0000 | 4,342.7205 | 4,342.7205 | 0.7016 | 0.0000 | 4,360.2603 |
| 2024 | 2.0558 | 16.0556 | 19.8890 | 0.0441 | 1.4207 | 0.6229 | 2.0436 | 0.3813 | 0.5858 | 0.9671 | 0.0000 | 4,301.7828 | 4,301.7828 | 0.6966 | 0.0000 | 4,319.1972 |
| 2025 | 54.9916 | 15.0216 | 19.5125 | 0.0437 | 1.4207 | 0.5369 | 1.9576 | 0.3813 | 0.5050 | 0.8863 | 0.0000 | 4,260.3047 | 4,260.3047 | 0.7160 | 0.0000 | 4,277.5977 |
| **Maximum** | **54.9916** | **38.9039** | **29.5638** | **0.0634** | **18.2141** | **1.6359** | **19.8276** | **9.9699** | **1.5050** | **11.4543** | **0.0000** | **6,146.4062** | **6,146.4062** | **1.9485** | **0.0000** | **6,195.1180** |

## 2.1 Overall Construction (Maximum Daily Emission)

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2022 | 3.7048 | 38.9039 | 29.5638 | 0.0634 | 8.2777 | 1.6359 | 9.8912 | 4.5080 | 1.5050 | 5.9925 | 0.0000 | 6,146.4062 | 6,146.4062 | 1.9485 | 0.0000 | 6,195.1180 |
| 2023 | 2.1941 | 17.0617 | 20.2818 | 0.0445 | 1.4207 | 0.7095 | 2.1302 | 0.3813 | 0.6675 | 1.0488 | 0.0000 | 4,342.7205 | 4,342.7205 | 0.7016 | 0.0000 | 4,360.2603 |
| 2024 | 2.0558 | 16.0556 | 19.8890 | 0.0441 | 1.4207 | 0.6229 | 2.0436 | 0.3813 | 0.5858 | 0.9671 | 0.0000 | 4,301.7828 | 4,301.7828 | 0.6966 | 0.0000 | 4,319.1972 |
| 2025 | 54.9916 | 15.0216 | 19.5125 | 0.0437 | 1.4207 | 0.5369 | 1.9576 | 0.3813 | 0.5050 | 0.8863 | 0.0000 | 4,260.3047 | 4,260.3047 | 0.7160 | 0.0000 | 4,277.5977 |
| **Maximum** | **54.9916** | **38.9039** | **29.5638** | **0.0634** | **8.2777** | **1.6359** | **9.8912** | **4.5080** | **1.5050** | **5.9925** | **0.0000** | **6,146.4062** | **6,146.4062** | **1.9485** | **0.0000** | **6,195.1180** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **44.21** | **0.00** | **38.28** | **49.14** | **0.00** | **38.04** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 28.7568 | 5.5431 | 196.3720 | 0.5814 | | 28.5482 | 28.5482 | | 28.5482 | 28.5482 | 4,166.1337 | 3,184.8150 | 7,350.9487 | 19.5748 | 0.0577 | 7,857.4992 |
| Energy | 0.1571 | 1.3427 | 0.5714 | 8.5700e-003 | | 0.1086 | 0.1086 | | 0.1086 | 0.1086 | | 1,714.0827 | 1,714.0827 | 0.0329 | 0.0314 | 1,724.2687 |
| Mobile | 3.8750 | 15.8650 | 51.4906 | 0.1408 | 14.3552 | 0.1325 | 14.4877 | 3.8302 | 0.1237 | 3.9539 | | 14,210.8918 | 14,210.8918 | 0.8799 | | 14,232.8902 |
| **Total** | **32.7890** | **22.7508** | **248.4339** | **0.7308** | **14.3552** | **28.7893** | **43.1445** | **3.8302** | **28.7804** | **32.6107** | **4,166.1337** | **19,109.7895** | **23,275.9232** | **20.4876** | **0.0891** | **23,814.6581** |

### Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 9.7044 | 2.7205 | 23.3476 | 0.0169 | | 0.3224 | 0.3224 | | 0.3224 | 0.3224 | 0.0000 | 3,184.8150 | 3,184.8150 | 0.0990 | 0.0577 | 3,204.4698 |
| Energy | 0.1482 | 1.2665 | 0.5389 | 8.0800e-003 | | 0.1024 | 0.1024 | | 0.1024 | 0.1024 | | 1,616.7770 | 1,616.7770 | 0.0310 | 0.0296 | 1,626.3846 |
| Mobile | 3.7881 | 15.2142 | 48.9217 | 0.1318 | 13.3647 | 0.1245 | 13.4892 | 3.5660 | 0.1162 | 3.6821 | | 13,296.8660 | 13,296.8660 | 0.8460 | | 13,318.0164 |
| **Total** | **13.6406** | **19.2012** | **72.8082** | **0.1568** | **13.3647** | **0.5492** | **13.9139** | **3.5660** | **0.5409** | **4.1069** | **0.0000** | **18,098.4580** | **18,098.4580** | **0.9760** | **0.0873** | **18,148.8709** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | 58.40 | 15.60 | 70.69 | 78.55 | 6.90 | 98.09 | 67.75 | 6.90 | 98.12 | 87.41 | 100.00 | 5.29 | 22.24 | 95.24 | 2.00 | 23.79 |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 1/1/2022 | 2/11/2022 | 5 | 30 | |
| 2 | Grading | Grading | 2/12/2022 | 5/27/2022 | 5 | 75 | |
| 3 | Building Construction | Building Construction | 5/28/2022 | 3/28/2025 | 5 | 740 | |
| 4 | Paving | Paving | 3/29/2025 | 6/13/2025 | 5 | 55 | |
| 5 | Architectural Coating | Architectural Coating | 6/14/2025 | 8/29/2025 | 5 | 55 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 187.5**

**Acres of Paving: 0**

**Residential Indoor: 749,250; Residential Outdoor: 249,750; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 149.00 | 29.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 30.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

## 3.2 Site Preparation - 2022

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.1701 | 33.0835 | 19.6978 | 0.0380 | | 1.6126 | 1.6126 | | 1.4836 | 1.4836 | | 3,686.0619 | 3,686.0619 | 1.1922 | | 3,715.8655 |
| **Total** | **3.1701** | **33.0835** | **19.6978** | **0.0380** | **18.0663** | **1.6126** | **19.6788** | **9.9307** | **1.4836** | **11.4143** | | **3,686.0619** | **3,686.0619** | **1.1922** | | **3,715.8655** |

## 3.2 Site Preparation - 2022

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0720 | 0.0544 | 0.4701 | 1.2200e-003 | 0.1479 | 9.2000e-004 | 0.1488 | 0.0392 | 8.5000e-004 | 0.0401 | | 121.4961 | 121.4961 | 3.8300e-003 | | 121.5919 |
| **Total** | **0.0720** | **0.0544** | **0.4701** | **1.2200e-003** | **0.1479** | **9.2000e-004** | **0.1488** | **0.0392** | **8.5000e-004** | **0.0401** | | **121.4961** | **121.4961** | **3.8300e-003** | | **121.5919** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.1298 | 0.0000 | 8.1298 | 4.4688 | 0.0000 | 4.4688 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.1701 | 33.0835 | 19.6978 | 0.0380 | | 1.6126 | 1.6126 | | 1.4836 | 1.4836 | 0.0000 | 3,686.0619 | 3,686.0619 | 1.1922 | | 3,715.8655 |
| **Total** | **3.1701** | **33.0835** | **19.6978** | **0.0380** | **8.1298** | **1.6126** | **9.7424** | **4.4688** | **1.4836** | **5.9524** | **0.0000** | **3,686.0619** | **3,686.0619** | **1.1922** | | **3,715.8655** |

## 3.2 Site Preparation - 2022

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0720 | 0.0544 | 0.4701 | 1.2200e-003 | 0.1479 | 9.2000e-004 | 0.1488 | 0.0392 | 8.5000e-004 | 0.0401 | | 121.4961 | 121.4961 | 3.8300e-003 | | 121.5919 |
| **Total** | **0.0720** | **0.0544** | **0.4701** | **1.2200e-003** | **0.1479** | **9.2000e-004** | **0.1488** | **0.0392** | **8.5000e-004** | **0.0401** | | **121.4961** | **121.4961** | **3.8300e-003** | | **121.5919** |

## 3.3 Grading - 2022

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.6248 | 38.8435 | 29.0415 | 0.0621 | | 1.6349 | 1.6349 | | 1.5041 | 1.5041 | | 6,011.4105 | 6,011.4105 | 1.9442 | | 6,060.0158 |
| **Total** | **3.6248** | **38.8435** | **29.0415** | **0.0621** | **8.6733** | **1.6349** | **10.3082** | **3.5965** | **1.5041** | **5.1006** | | **6,011.4105** | **6,011.4105** | **1.9442** | | **6,060.0158** |

## 3.3 Grading - 2022

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0800 | 0.0604 | 0.5223 | 1.3600e-003 | 0.1643 | 1.0200e-003 | 0.1653 | 0.0436 | 9.4000e-004 | 0.0445 | | 134.9957 | 134.9957 | 4.2600e-003 | | 135.1021 |
| **Total** | **0.0800** | **0.0604** | **0.5223** | **1.3600e-003** | **0.1643** | **1.0200e-003** | **0.1653** | **0.0436** | **9.4000e-004** | **0.0445** | | **134.9957** | **134.9957** | **4.2600e-003** | | **135.1021** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 3.9030 | 0.0000 | 3.9030 | 1.6184 | 0.0000 | 1.6184 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.6248 | 38.8435 | 29.0415 | 0.0621 | | 1.6349 | 1.6349 | | 1.5041 | 1.5041 | 0.0000 | 6,011.4105 | 6,011.4105 | 1.9442 | | 6,060.0158 |
| **Total** | **3.6248** | **38.8435** | **29.0415** | **0.0621** | **3.9030** | **1.6349** | **5.5379** | **1.6184** | **1.5041** | **3.1225** | **0.0000** | **6,011.4105** | **6,011.4105** | **1.9442** | | **6,060.0158** |

## 3.3 Grading - 2022

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0800 | 0.0604 | 0.5223 | 1.3600e-003 | 0.1643 | 1.0200e-003 | 0.1653 | 0.0436 | 9.4000e-004 | 0.0445 | | 134.9957 | 134.9957 | 4.2600e-003 | | 135.1021 |
| **Total** | **0.0800** | **0.0604** | **0.5223** | **1.3600e-003** | **0.1643** | **1.0200e-003** | **0.1653** | **0.0436** | **9.4000e-004** | **0.0445** | | **134.9957** | **134.9957** | **4.2600e-003** | | **135.1021** |

## 3.4 Building Construction - 2022

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.7062 | 15.6156 | 16.3634 | 0.0269 | | 0.8090 | 0.8090 | | 0.7612 | 0.7612 | | 2,554.3336 | 2,554.3336 | 0.6120 | | 2,569.6322 |
| **Total** | **1.7062** | **15.6156** | **16.3634** | **0.0269** | | **0.8090** | **0.8090** | | **0.7612** | **0.7612** | | **2,554.3336** | **2,554.3336** | **0.6120** | | **2,569.6322** |

## 3.4 Building Construction - 2022

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0969 | 3.0144 | 0.6402 | 8.0200e-003 | 0.1967 | 8.6600e-003 | 0.2053 | 0.0566 | 8.2800e-003 | 0.0649 | | 838.8227 | 838.8227 | 0.0988 | | 841.2918 |
| Worker | 0.5960 | 0.4501 | 3.8912 | 0.0101 | 1.2240 | 7.6400e-003 | 1.2316 | 0.3247 | 7.0300e-003 | 0.3317 | | 1,005.7178 | 1,005.7178 | 0.0317 | | 1,006.5108 |
| **Total** | **0.6929** | **3.4645** | **4.5314** | **0.0181** | **1.4207** | **0.0163** | **1.4370** | **0.3813** | **0.0153** | **0.3966** | | **1,844.5405** | **1,844.5405** | **0.1305** | | **1,847.8026** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.7062 | 15.6156 | 16.3634 | 0.0269 | | 0.8090 | 0.8090 | | 0.7612 | 0.7612 | 0.0000 | 2,554.3336 | 2,554.3336 | 0.6120 | | 2,569.6322 |
| **Total** | **1.7062** | **15.6156** | **16.3634** | **0.0269** | | **0.8090** | **0.8090** | | **0.7612** | **0.7612** | **0.0000** | **2,554.3336** | **2,554.3336** | **0.6120** | | **2,569.6322** |

## 3.4 Building Construction - 2022

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0969 | 3.0144 | 0.6402 | 8.0200e-003 | 0.1967 | 8.6600e-003 | 0.2053 | 0.0566 | 8.2800e-003 | 0.0649 | | 838.8227 | 838.8227 | 0.0988 | | 841.2918 |
| Worker | 0.5960 | 0.4501 | 3.8912 | 0.0101 | 1.2240 | 7.6400e-003 | 1.2316 | 0.3247 | 7.0300e-003 | 0.3317 | | 1,005.7178 | 1,005.7178 | 0.0317 | | 1,006.5108 |
| **Total** | **0.6929** | **3.4645** | **4.5314** | **0.0181** | **1.4207** | **0.0163** | **1.4370** | **0.3813** | **0.0153** | **0.3966** | | **1,844.5405** | **1,844.5405** | **0.1305** | | **1,847.8026** |

## 3.4 Building Construction - 2023

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.5728 | 14.3849 | 16.2440 | 0.0269 | | 0.6997 | 0.6997 | | 0.6584 | 0.6584 | | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **1.5728** | **14.3849** | **16.2440** | **0.0269** | | **0.6997** | **0.6997** | | **0.6584** | **0.6584** | | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

## 3.4 Building Construction - 2023

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0672 | 2.2748 | 0.5218 | 7.8300e-003 | 0.1967 | 2.3400e-003 | 0.1990 | 0.0566 | 2.2400e-003 | 0.0589 | | 818.9114 | 818.9114 | 0.0657 | | 820.5546 |
| Worker | 0.5542 | 0.4020 | 3.5159 | 9.7300e-003 | 1.2240 | 7.4100e-003 | 1.2314 | 0.3247 | 6.8300e-003 | 0.3315 | | 968.5992 | 968.5992 | 0.0280 | | 969.2996 |
| **Total** | **0.6213** | **2.6768** | **4.0378** | **0.0176** | **1.4207** | **9.7500e-003** | **1.4304** | **0.3813** | **9.0700e-003** | **0.3904** | | **1,787.5106** | **1,787.5106** | **0.0937** | | **1,789.8542** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.5728 | 14.3849 | 16.2440 | 0.0269 | | 0.6997 | 0.6997 | | 0.6584 | 0.6584 | 0.0000 | 2,555.2099 | 2,555.2099 | 0.6079 | | 2,570.4061 |
| **Total** | **1.5728** | **14.3849** | **16.2440** | **0.0269** | | **0.6997** | **0.6997** | | **0.6584** | **0.6584** | **0.0000** | **2,555.2099** | **2,555.2099** | **0.6079** | | **2,570.4061** |

## 3.4 Building Construction - 2023

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0672 | 2.2748 | 0.5218 | 7.8300e-003 | 0.1967 | 2.3400e-003 | 0.1990 | 0.0566 | 2.2400e-003 | 0.0589 | | 818.9114 | 818.9114 | 0.0657 | | 820.5546 |
| Worker | 0.5542 | 0.4020 | 3.5159 | 9.7300e-003 | 1.2240 | 7.4100e-003 | 1.2314 | 0.3247 | 6.8300e-003 | 0.3315 | | 968.5992 | 968.5992 | 0.0280 | | 969.2996 |
| **Total** | **0.6213** | **2.6768** | **4.0378** | **0.0176** | **1.4207** | **9.7500e-003** | **1.4304** | **0.3813** | **9.0700e-003** | **0.3904** | | **1,787.5106** | **1,787.5106** | **0.0937** | | **1,789.8542** |

## 3.4 Building Construction - 2024

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4716 | 13.4438 | 16.1668 | 0.0270 | | 0.6133 | 0.6133 | | 0.5769 | 0.5769 | | 2,555.6989 | 2,555.6989 | 0.6044 | | 2,570.8077 |
| **Total** | **1.4716** | **13.4438** | **16.1668** | **0.0270** | | **0.6133** | **0.6133** | | **0.5769** | **0.5769** | | **2,555.6989** | **2,555.6989** | **0.6044** | | **2,570.8077** |

## 3.4 Building Construction - 2024

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0652 | 2.2502 | 0.4946 | 7.7700e-003 | 0.1967 | 2.3100e-003 | 0.1990 | 0.0566 | 2.2100e-003 | 0.0589 | | 812.5461 | 812.5461 | 0.0672 | | 814.2250 |
| Worker | 0.5191 | 0.3617 | 3.2276 | 9.3700e-003 | 1.2240 | 7.2600e-003 | 1.2313 | 0.3247 | 6.6800e-003 | 0.3313 | | 933.5377 | 933.5377 | 0.0251 | | 934.1645 |
| **Total** | **0.5842** | **2.6118** | **3.7222** | **0.0171** | **1.4207** | **9.5700e-003** | **1.4303** | **0.3813** | **8.8900e-003** | **0.3902** | | **1,746.0839** | **1,746.0839** | **0.0922** | | **1,748.3895** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.4716 | 13.4438 | 16.1668 | 0.0270 | | 0.6133 | 0.6133 | | 0.5769 | 0.5769 | 0.0000 | 2,555.6989 | 2,555.6989 | 0.6044 | | 2,570.8077 |
| **Total** | **1.4716** | **13.4438** | **16.1668** | **0.0270** | | **0.6133** | **0.6133** | | **0.5769** | **0.5769** | **0.0000** | **2,555.6989** | **2,555.6989** | **0.6044** | | **2,570.8077** |

## 3.4 Building Construction - 2024

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0652 | 2.2502 | 0.4946 | 7.7700e-003 | 0.1967 | 2.3100e-003 | 0.1990 | 0.0566 | 2.2100e-003 | 0.0589 | | 812.5461 | 812.5461 | 0.0672 | | 814.2250 |
| Worker | 0.5191 | 0.3617 | 3.2276 | 9.3700e-003 | 1.2240 | 7.2600e-003 | 1.2313 | 0.3247 | 6.6800e-003 | 0.3313 | | 933.5377 | 933.5377 | 0.0251 | | 934.1645 |
| **Total** | **0.5842** | **2.6118** | **3.7222** | **0.0171** | **1.4207** | **9.5700e-003** | **1.4303** | **0.3813** | **8.8900e-003** | **0.3902** | | **1,746.0839** | **1,746.0839** | **0.0922** | | **1,748.3895** |

## 3.4 Building Construction - 2025

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

## 3.4 Building Construction - 2025

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0634 | 2.2255 | 0.4714 | 7.7200e-003 | 0.1967 | 2.2900e-003 | 0.1990 | 0.0566 | 2.1900e-003 | 0.0588 | | 806.6980 | 806.6980 | 0.0684 | | 808.4076 |
| Worker | 0.4879 | 0.3264 | 2.9565 | 9.0000e-003 | 1.2240 | 7.0900e-003 | 1.2311 | 0.3247 | 6.5300e-003 | 0.3312 | | 897.1324 | 897.1324 | 0.0224 | | 897.6921 |
| **Total** | **0.5513** | **2.5519** | **3.4279** | **0.0167** | **1.4207** | **9.3800e-003** | **1.4301** | **0.3813** | **8.7200e-003** | **0.3900** | | **1,703.830 4** | **1,703.830 4** | **0.0908** | | **1,706.099 7** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.474 4 | 2,556.474 4 | 0.6010 | | 2,571.498 1 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.474 4** | **2,556.474 4** | **0.6010** | | **2,571.498 1** |

## 3.4 Building Construction - 2025

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0634 | 2.2255 | 0.4714 | 7.7200e-003 | 0.1967 | 2.2900e-003 | 0.1990 | 0.0566 | 2.1900e-003 | 0.0588 | | 806.6980 | 806.6980 | 0.0684 | | 808.4076 |
| Worker | 0.4879 | 0.3264 | 2.9565 | 9.0000e-003 | 1.2240 | 7.0900e-003 | 1.2311 | 0.3247 | 6.5300e-003 | 0.3312 | | 897.1324 | 897.1324 | 0.0224 | | 897.6921 |
| **Total** | **0.5513** | **2.5519** | **3.4279** | **0.0167** | **1.4207** | **9.3800e-003** | **1.4301** | **0.3813** | **8.7200e-003** | **0.3900** | | **1,703.8304** | **1,703.8304** | **0.0908** | | **1,706.0997** |

## 3.5 Paving - 2025

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.9152 | 8.5816 | 14.5780 | 0.0228 | | 0.4185 | 0.4185 | | 0.3850 | 0.3850 | | 2,206.7452 | 2,206.7452 | 0.7137 | | 2,224.5878 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **0.9152** | **8.5816** | **14.5780** | **0.0228** | | **0.4185** | **0.4185** | | **0.3850** | **0.3850** | | **2,206.7452** | **2,206.7452** | **0.7137** | | **2,224.5878** |

## 3.5 Paving - 2025

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0491 | 0.0329 | 0.2976 | 9.1000e-004 | 0.1232 | 7.1000e-004 | 0.1239 | 0.0327 | 6.6000e-004 | 0.0333 | | 90.3153 | 90.3153 | 2.2500e-003 | | 90.3717 |
| **Total** | **0.0491** | **0.0329** | **0.2976** | **9.1000e-004** | **0.1232** | **7.1000e-004** | **0.1239** | **0.0327** | **6.6000e-004** | **0.0333** | | **90.3153** | **90.3153** | **2.2500e-003** | | **90.3717** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.9152 | 8.5816 | 14.5780 | 0.0228 | | 0.4185 | 0.4185 | | 0.3850 | 0.3850 | 0.0000 | 2,206.7452 | 2,206.7452 | 0.7137 | | 2,224.5878 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **0.9152** | **8.5816** | **14.5780** | **0.0228** | | **0.4185** | **0.4185** | | **0.3850** | **0.3850** | **0.0000** | **2,206.7452** | **2,206.7452** | **0.7137** | | **2,224.5878** |

## 3.5 Paving - 2025

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0491 | 0.0329 | 0.2976 | 9.1000e-004 | 0.1232 | 7.1000e-004 | 0.1239 | 0.0327 | 6.6000e-004 | 0.0333 | | 90.3153 | 90.3153 | 2.2500e-003 | | 90.3717 |
| **Total** | **0.0491** | **0.0329** | **0.2976** | **9.1000e-004** | **0.1232** | **7.1000e-004** | **0.1239** | **0.0327** | **6.6000e-004** | **0.0333** | | **90.3153** | **90.3153** | **2.2500e-003** | | **90.3717** |

## 3.6 Architectural Coating - 2025

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 54.7225 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **54.8934** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

## 3.6 Architectural Coating - 2025

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0982 | 0.0657 | 0.5953 | 1.8100e-003 | 0.2464 | 1.4300e-003 | 0.2479 | 0.0654 | 1.3100e-003 | 0.0667 | | 180.6307 | 180.6307 | 4.5100e-003 | | 180.7434 |
| **Total** | **0.0982** | **0.0657** | **0.5953** | **1.8100e-003** | **0.2464** | **1.4300e-003** | **0.2479** | **0.0654** | **1.3100e-003** | **0.0667** | | **180.6307** | **180.6307** | **4.5100e-003** | | **180.7434** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 54.7225 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **54.8934** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

### 3.6 Architectural Coating - 2025

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0982 | 0.0657 | 0.5953 | 1.8100e-003 | 0.2464 | 1.4300e-003 | 0.2479 | 0.0654 | 1.3100e-003 | 0.0667 | | 180.6307 | 180.6307 | 4.5100e-003 | | 180.7434 |
| **Total** | **0.0982** | **0.0657** | **0.5953** | **1.8100e-003** | **0.2464** | **1.4300e-003** | **0.2479** | **0.0654** | **1.3100e-003** | **0.0667** | | **180.6307** | **180.6307** | **4.5100e-003** | | **180.7434** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 3.7881 | 15.2142 | 48.9217 | 0.1318 | 13.3647 | 0.1245 | 13.4892 | 3.5660 | 0.1162 | 3.6821 | | 13,296.8660 | 13,296.8660 | 0.8460 | | 13,318.0164 |
| Unmitigated | 3.8750 | 15.8650 | 51.4906 | 0.1408 | 14.3552 | 0.1325 | 14.4877 | 3.8302 | 0.1237 | 3.9539 | | 14,210.8918 | 14,210.8918 | 0.8799 | | 14,232.8902 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Apartments Low Rise | 1,061.40 | 1,180.30 | 910.60 | 3,024,947 | 2,816,226 |
| Single Family Housing | 1,180.00 | 1,192.50 | 1068.75 | 3,337,076 | 3,106,817 |
| Total | 2,241.40 | 2,372.80 | 1,979.35 | 6,362,023 | 5,923,043 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Apartments Low Rise | 10.80 | 7.30 | 7.50 | 42.30 | 19.60 | 38.10 | 86 | 11 | 3 |
| Single Family Housing | 10.80 | 7.30 | 7.50 | 42.30 | 19.60 | 38.10 | 86 | 11 | 3 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Low Rise | 0.534300 | 0.203000 | 0.167300 | 0.054500 | 0.001300 | 0.000900 | 0.008600 | 0.020700 | 0.000000 | 0.004400 | 0.002500 | 0.000700 | 0.001800 |
| Single Family Housing | 0.534300 | 0.203000 | 0.167300 | 0.054500 | 0.001300 | 0.000900 | 0.008600 | 0.020700 | 0.000000 | 0.004000 | 0.002500 | 0.000700 | 0.001800 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.1482 | 1.2665 | 0.5389 | 8.0800e-003 | | 0.1024 | 0.1024 | | 0.1024 | 0.1024 | | 1,616.7770 | 1,616.7770 | 0.0310 | 0.0296 | 1,626.3846 |
| NaturalGas Unmitigated | 0.1571 | 1.3427 | 0.5714 | 8.5700e-003 | | 0.1086 | 0.1086 | | 0.1086 | 0.1086 | | 1,714.0827 | 1,714.0827 | 0.0329 | 0.0314 | 1,724.2687 |

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| Apartments Low Rise | 5615.85 | 0.0606 | 0.5175 | 0.2202 | 3.3000e-003 | | 0.0418 | 0.0418 | | 0.0418 | 0.0418 | | 660.6887 | 660.6887 | 0.0127 | 0.0121 | 664.6149 |
| Single Family Housing | 8953.85 | 0.0966 | 0.8252 | 0.3511 | 5.2700e-003 | | 0.0667 | 0.0667 | | 0.0667 | 0.0667 | | 1,053.3940 | 1,053.3940 | 0.0202 | 0.0193 | 1,059.6538 |
| **Total** | | **0.1571** | **1.3427** | **0.5714** | **8.5700e-003** | | **0.1086** | **0.1086** | | **0.1086** | **0.1086** | | **1,714.0827** | **1,714.0827** | **0.0329** | **0.0314** | **1,724.2687** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| Apartments Low Rise | 5.32627 | 0.0574 | 0.4909 | 0.2089 | 3.1300e-003 | | 0.0397 | 0.0397 | | 0.0397 | 0.0397 | | 626.6205 | 626.6205 | 0.0120 | 0.0115 | 630.3442 |
| Single Family Housing | 8.41633 | 0.0908 | 0.7756 | 0.3301 | 4.9500e-003 | | 0.0627 | 0.0627 | | 0.0627 | 0.0627 | | 990.1565 | 990.1565 | 0.0190 | 0.0182 | 996.0405 |
| **Total** | | **0.1482** | **1.2665** | **0.5389** | **8.0800e-003** | | **0.1024** | **0.1024** | | **0.1024** | **0.1024** | | **1,616.7769** | **1,616.7769** | **0.0310** | **0.0296** | **1,626.3847** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

| Category | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 9.7044 | 2.7205 | 23.3476 | 0.0169 | | 0.3224 | 0.3224 | | 0.3224 | 0.3224 | 0.0000 | 3,184.8150 | 3,184.8150 | 0.0990 | 0.0577 | 3,204.4698 |
| Unmitigated | 28.7568 | 5.5431 | 196.3720 | 0.5814 | | 28.5482 | 28.5482 | | 28.5482 | 28.5482 | 4,166.1337 | 3,184.8150 | 7,350.9487 | 19.5748 | 0.0577 | 7,857.4992 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.8246 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 7.9180 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 19.3407 | 5.2859 | 174.0726 | 0.5802 | | 28.4250 | 28.4250 | | 28.4250 | 28.4250 | 4,166.133 7 | 3,144.705 9 | 7,310.839 6 | 19.5361 | 0.0577 | 7,816.422 7 |
| Landscaping | 0.6735 | 0.2572 | 22.2993 | 1.1800e-003 | | 0.1232 | 0.1232 | | 0.1232 | 0.1232 | | 40.1091 | 40.1091 | 0.0387 | | 41.0765 |
| **Total** | **28.7568** | **5.5431** | **196.3719** | **0.5814** | | **28.5482** | **28.5482** | | **28.5482** | **28.5482** | **4,166.133 7** | **3,184.815 0** | **7,350.948 7** | **19.5748** | **0.0577** | **7,857.499 2** |

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.8246 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 7.9180 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.2883 | 2.4634 | 1.0482 | 0.0157 | | 0.1992 | 0.1992 | | 0.1992 | 0.1992 | 0.0000 | 3,144.705 9 | 3,144.705 9 | 0.0603 | 0.0577 | 3,163.393 3 |
| Landscaping | 0.6735 | 0.2572 | 22.2993 | 1.1800e-003 | | 0.1232 | 0.1232 | | 0.1232 | 0.1232 | | 40.1091 | 40.1091 | 0.0387 | | 41.0765 |
| **Total** | **9.7044** | **2.7205** | **23.3476** | **0.0169** | | **0.3224** | **0.3224** | | **0.3224** | **0.3224** | **0.0000** | **3,184.815 0** | **3,184.815 0** | **0.0990** | **0.0577** | **3,204.469 8** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

# 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

### Fire Pumps and Emergency Generators

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

### Boilers

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

### User Defined Equipment

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

# CalEEMod Output

# Phase 2 Construction and Operations

# (Summer Daily)

# Lacey Ranch Master Plan Phase 2 Const and Ops

**Kings County, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| City Park | 7.90 | Acre | 7.90 | 344,124.00 | 0 |
| Apartments Low Rise | 59.00 | Dwelling Unit | 4.88 | 59,000.00 | 169 |
| Single Family Housing | 125.00 | Dwelling Unit | 31.07 | 225,000.00 | 358 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 37 |
| **Climate Zone** | 3 | | | **Operational Year** | 2026 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 290 | **CH4 Intensity (lb/MWhr)** | 0.022 | **N2O Intensity (lb/MWhr)** | 0.005 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E Intensity Factors

Land Use - Project acres

Construction Phase -

Architectural Coating - Rule 4601 Architectural Coatings compliance

Vehicle Trips - ITE 10th Ed Trip Gen SFR 9.44, 9.54, 8.55, Apt 7.32, 8.14, 6.28

Woodstoves - Rule 4901 Residential Woodburning hearths allowed 2 per acre

Area Coating - Rule 4601 Architectural Coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Architectural Coatings

Energy Mitigation - 2019 Title 24

Water Mitigation - CalGreen indoor water savings and MWELO outdoor savings

Waste Mitigation - Calrecycle 75% diversion mandate

Fleet Mix - SJVAPCD Residential Fleet Mix for 2026

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblArchitecturalCoating | EF_Residential_Exterior | 150.00 | 65.00 |
| tblArchitecturalCoating | EF_Residential_Interior | 150.00 | 65.00 |
| tblAreaCoating | Area_EF_Residential_Exterior | 150 | 65 |
| tblAreaCoating | Area_EF_Residential_Interior | 150 | 65 |
| tblFleetMix | HHD | 0.17 | 0.02 |
| tblFleetMix | HHD | 0.17 | 0.02 |
| tblFleetMix | HHD | 0.17 | 0.02 |
| tblFleetMix | LDA | 0.52 | 0.52 |
| tblFleetMix | LDA | 0.52 | 0.52 |
| tblFleetMix | LDA | 0.52 | 0.52 |
| tblFleetMix | LDT1 | 0.03 | 0.21 |

| | | | |
|---|---|---|---|
| tblFleetMix | LDT1 | 0.03 | 0.21 |
| tblFleetMix | LDT1 | 0.03 | 0.21 |
| tblFleetMix | LDT2 | 0.15 | 0.17 |
| tblFleetMix | LDT2 | 0.15 | 0.17 |
| tblFleetMix | LDT2 | 0.15 | 0.17 |
| tblFleetMix | LHD1 | 0.01 | 8.0000e-004 |
| tblFleetMix | LHD1 | 0.01 | 8.0000e-004 |
| tblFleetMix | LHD1 | 0.01 | 8.0000e-004 |
| tblFleetMix | LHD2 | 3.8430e-003 | 9.0000e-004 |
| tblFleetMix | LHD2 | 3.8430e-003 | 9.0000e-004 |
| tblFleetMix | LHD2 | 3.8430e-003 | 9.0000e-004 |
| tblFleetMix | MCY | 5.2980e-003 | 2.5000e-003 |
| tblFleetMix | MCY | 5.2980e-003 | 2.5000e-003 |
| tblFleetMix | MCY | 5.2980e-003 | 2.5000e-003 |
| tblFleetMix | MDV | 0.10 | 0.06 |
| tblFleetMix | MDV | 0.10 | 0.06 |
| tblFleetMix | MDV | 0.10 | 0.06 |
| tblFleetMix | MH | 5.5700e-004 | 2.3000e-003 |
| tblFleetMix | MH | 5.5700e-004 | 2.3000e-003 |
| tblFleetMix | MH | 5.5700e-004 | 2.3000e-003 |
| tblFleetMix | MHD | 0.01 | 7.5000e-003 |
| tblFleetMix | MHD | 0.01 | 7.5000e-003 |
| tblFleetMix | MHD | 0.01 | 7.5000e-003 |
| tblFleetMix | OBUS | 1.6570e-003 | 0.00 |
| tblFleetMix | OBUS | 1.6570e-003 | 0.00 |
| tblFleetMix | OBUS | 1.6570e-003 | 0.00 |
| tblFleetMix | SBUS | 8.7300e-004 | 2.0000e-004 |

| | | | |
|---|---|---|---|
| tblFleetMix | SBUS | 8.7300e-004 | 2.0000e-004 |
| tblFleetMix | SBUS | 8.7300e-004 | 2.0000e-004 |
| tblFleetMix | UBUS | 1.5200e-003 | 4.4000e-003 |
| tblFleetMix | UBUS | 1.5200e-003 | 4.4000e-003 |
| tblFleetMix | UBUS | 1.5200e-003 | 4.4000e-003 |
| tblLandUse | LotAcreage | 3.69 | 4.88 |
| tblLandUse | LotAcreage | 40.58 | 31.07 |
| tblProjectCharacteristics | CH4IntensityFactor | 0.029 | 0.022 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 290 |
| tblProjectCharacteristics | N2OIntensityFactor | 0.006 | 0.005 |

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2026 | 2.9661 | 27.9768 | 26.7793 | 0.0634 | 18.2141 | 1.1318 | 19.3018 | 9.9699 | 1.0413 | 10.9705 | 0.0000 | 6,272.418 3 | 6,272.418 3 | 1.9464 | 0.0000 | 6,292.374 9 |
| 2027 | 2.2263 | 18.5121 | 21.8967 | 0.0626 | 2.4213 | 0.5438 | 2.9650 | 0.6540 | 0.5114 | 1.1653 | 0.0000 | 6,208.366 9 | 6,208.366 9 | 0.7966 | 0.0000 | 6,228.282 5 |
| 2028 | 2.1799 | 18.4337 | 21.5525 | 0.0620 | 2.4213 | 0.5430 | 2.9643 | 0.6540 | 0.5107 | 1.1646 | 0.0000 | 6,152.887 2 | 6,152.887 2 | 0.7948 | 0.0000 | 6,172.757 9 |
| 2029 | 42.3474 | 18.3586 | 21.2281 | 0.0615 | 2.4213 | 0.5423 | 2.9636 | 0.6540 | 0.5100 | 1.1640 | 0.0000 | 6,103.876 2 | 6,103.876 2 | 0.7929 | 0.0000 | 6,123.699 5 |
| **Maximum** | **42.3474** | **27.9768** | **26.7793** | **0.0634** | **18.2141** | **1.1318** | **19.3018** | **9.9699** | **1.0413** | **10.9705** | **0.0000** | **6,272.418 3** | **6,272.418 3** | **1.9464** | **0.0000** | **6,292.374 9** |

## 2.1 Overall Construction (Maximum Daily Emission)

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2026 | 2.9661 | 27.9768 | 26.7793 | 0.0634 | 8.2777 | 1.1318 | 9.3653 | 4.5080 | 1.0413 | 5.5087 | 0.0000 | 6,272.4183 | 6,272.4183 | 1.9464 | 0.0000 | 6,292.3749 |
| 2027 | 2.2263 | 18.5121 | 21.8967 | 0.0626 | 2.4213 | 0.5438 | 2.9650 | 0.6540 | 0.5114 | 1.1653 | 0.0000 | 6,208.3669 | 6,208.3669 | 0.7966 | 0.0000 | 6,228.2825 |
| 2028 | 2.1799 | 18.4337 | 21.5525 | 0.0620 | 2.4213 | 0.5430 | 2.9643 | 0.6540 | 0.5107 | 1.1646 | 0.0000 | 6,152.8872 | 6,152.8872 | 0.7948 | 0.0000 | 6,172.7579 |
| 2029 | 42.3474 | 18.3586 | 21.2281 | 0.0615 | 2.4213 | 0.5423 | 2.9636 | 0.6540 | 0.5100 | 1.1640 | 0.0000 | 6,103.8762 | 6,103.8762 | 0.7929 | 0.0000 | 6,123.6995 |
| **Maximum** | **42.3474** | **27.9768** | **26.7793** | **0.0634** | **8.2777** | **1.1318** | **9.3653** | **4.5080** | **1.0413** | **5.5087** | **0.0000** | **6,272.4183** | **6,272.4183** | **1.9464** | **0.0000** | **6,292.3749** |

| | **ROG** | **NOx** | **CO** | **SO2** | **Fugitive PM10** | **Exhaust PM10** | **PM10 Total** | **Fugitive PM2.5** | **Exhaust PM2.5** | **PM2.5 Total** | **Bio- CO2** | **NBio-CO2** | **Total CO2** | **CH4** | **N20** | **CO2e** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **39.00** | **0.00** | **35.24** | **45.78** | **0.00** | **37.76** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 2.2 Overall Operational

**Unmitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 25.2546 | 4.5008 | 178.1619 | 0.5410 | | 26.6931 | 26.6931 | | 26.6931 | 26.6931 | 3,907.4486 | 2,170.3942 | 6,077.8428 | 18.3338 | 0.0393 | 6,547.8956 |
| Energy | 0.1212 | 1.0357 | 0.4407 | 6.6100e-003 | | 0.0837 | 0.0837 | | 0.0837 | 0.0837 | | 1,322.2260 | 1,322.2260 | 0.0253 | 0.0242 | 1,330.0833 |
| Mobile | 3.1124 | 7.9190 | 32.5217 | 0.1049 | 10.8507 | 0.0789 | 10.9296 | 2.8936 | 0.0733 | 2.9668 | | 10,604.0660 | 10,604.0660 | 0.4963 | | 10,616.4736 |
| **Total** | **28.4882** | **13.4555** | **211.1244** | **0.6525** | **10.8507** | **26.8558** | **37.7065** | **2.8936** | **26.8501** | **29.7437** | **3,907.4486** | **14,096.6861** | **18,004.1348** | **18.8554** | **0.0635** | **18,494.4526** |

**Mitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 7.3852 | 1.8534 | 15.8810 | 0.0115 | | 0.2199 | 0.2199 | | 0.2199 | 0.2199 | 0.0000 | 2,170.3942 | 2,170.3942 | 0.0673 | 0.0393 | 2,183.7838 |
| Energy | 0.1141 | 0.9754 | 0.4150 | 6.2300e-003 | | 0.0789 | 0.0789 | | 0.0789 | 0.0789 | | 1,245.1262 | 1,245.1262 | 0.0239 | 0.0228 | 1,252.5253 |
| Mobile | 3.0600 | 7.6467 | 30.6304 | 0.0981 | 10.1020 | 0.0741 | 10.1762 | 2.6939 | 0.0688 | 2.7628 | | 9,922.8187 | 9,922.8187 | 0.4740 | | 9,934.6685 |
| **Total** | **10.5593** | **10.4755** | **46.9265** | **0.1159** | **10.1020** | **0.3729** | **10.4749** | **2.6939** | **0.3676** | **3.0615** | **0.0000** | **13,338.3390** | **13,338.3390** | **0.5651** | **0.0621** | **13,370.9776** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | 62.93 | 22.15 | 77.77 | 82.24 | 6.90 | 98.61 | 72.22 | 6.90 | 98.63 | 89.71 | 100.00 | 5.38 | 25.92 | 97.00 | 2.22 | 27.70 |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 1/1/2026 | 2/11/2026 | 5 | 30 | |
| 2 | Grading | Grading | 2/12/2026 | 5/27/2026 | 5 | 75 | |
| 3 | Building Construction | Building Construction | 5/28/2026 | 3/28/2029 | 5 | 740 | |
| 4 | Paving | Paving | 3/29/2029 | 6/13/2029 | 5 | 55 | |
| 5 | Architectural Coating | Architectural Coating | 6/14/2029 | 8/29/2029 | 5 | 55 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 187.5**

**Acres of Paving: 0**

**Residential Indoor: 575,100; Residential Outdoor: 191,700; Non-Residential Indoor: 300; Non-Residential Outdoor: 100; Striped Parking Area: 0 (Architectural Coating – sqft)**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 232.00 | 76.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 46.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

## 3.2 Site Preparation - 2026

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.4727 | 25.2339 | 17.9118 | 0.0381 | | 1.0868 | 1.0868 | | 0.9999 | 0.9999 | | 3,689.1037 | 3,689.1037 | 1.1931 | | 3,718.9320 |
| **Total** | **2.4727** | **25.2339** | **17.9118** | **0.0381** | **18.0663** | **1.0868** | **19.1531** | **9.9307** | **0.9999** | **10.9305** | | **3,689.1037** | **3,689.1037** | **1.1931** | | **3,718.9320** |

## 3.2 Site Preparation - 2026

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0584 | 0.0305 | 0.4034 | 1.2000e-003 | 0.1479 | 8.5000e-004 | 0.1487 | 0.0392 | 7.8000e-004 | 0.0400 | | 120.0285 | 120.0285 | 2.8900e-003 | | 120.1008 |
| **Total** | **0.0584** | **0.0305** | **0.4034** | **1.2000e-003** | **0.1479** | **8.5000e-004** | **0.1487** | **0.0392** | **7.8000e-004** | **0.0400** | | **120.0285** | **120.0285** | **2.8900e-003** | | **120.1008** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.1298 | 0.0000 | 8.1298 | 4.4688 | 0.0000 | 4.4688 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.4727 | 25.2339 | 17.9118 | 0.0381 | | 1.0868 | 1.0868 | | 0.9999 | 0.9999 | 0.0000 | 3,689.1037 | 3,689.1037 | 1.1931 | | 3,718.9320 |
| **Total** | **2.4727** | **25.2339** | **17.9118** | **0.0381** | **8.1298** | **1.0868** | **9.2166** | **4.4688** | **0.9999** | **5.4687** | **0.0000** | **3,689.1037** | **3,689.1037** | **1.1931** | | **3,718.9320** |

## 3.2 Site Preparation - 2026

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0584 | 0.0305 | 0.4034 | 1.2000e-003 | 0.1479 | 8.5000e-004 | 0.1487 | 0.0392 | 7.8000e-004 | 0.0400 | | 120.0285 | 120.0285 | 2.8900e-003 | | 120.1008 |
| **Total** | **0.0584** | **0.0305** | **0.4034** | **1.2000e-003** | **0.1479** | **8.5000e-004** | **0.1487** | **0.0392** | **7.8000e-004** | **0.0400** | | **120.0285** | **120.0285** | **2.8900e-003** | | **120.1008** |

## 3.3 Grading - 2026

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.9012 | 27.9429 | 26.3311 | 0.0621 | | 1.1309 | 1.1309 | | 1.0404 | 1.0404 | | 6,008.2814 | 6,008.2814 | 1.9432 | | 6,056.8614 |
| **Total** | **2.9012** | **27.9429** | **26.3311** | **0.0621** | **8.6733** | **1.1309** | **9.8042** | **3.5965** | **1.0404** | **4.6369** | | **6,008.2814** | **6,008.2814** | **1.9432** | | **6,056.8614** |

## 3.3 Grading - 2026

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0648 | 0.0339 | 0.4482 | 1.3400e-003 | 0.1643 | 9.5000e-004 | 0.1652 | 0.0436 | 8.7000e-004 | 0.0445 | | 133.3650 | 133.3650 | 3.2200e-003 | | 133.4453 |
| **Total** | **0.0648** | **0.0339** | **0.4482** | **1.3400e-003** | **0.1643** | **9.5000e-004** | **0.1652** | **0.0436** | **8.7000e-004** | **0.0445** | | **133.3650** | **133.3650** | **3.2200e-003** | | **133.4453** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 3.9030 | 0.0000 | 3.9030 | 1.6184 | 0.0000 | 1.6184 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.9012 | 27.9429 | 26.3311 | 0.0621 | | 1.1309 | 1.1309 | | 1.0404 | 1.0404 | 0.0000 | 6,008.2814 | 6,008.2814 | 1.9432 | | 6,056.8614 |
| **Total** | **2.9012** | **27.9429** | **26.3311** | **0.0621** | **3.9030** | **1.1309** | **5.0339** | **1.6184** | **1.0404** | **2.6589** | **0.0000** | **6,008.2814** | **6,008.2814** | **1.9432** | | **6,056.8614** |

## 3.3 Grading - 2026

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0648 | 0.0339 | 0.4482 | 1.3400e-003 | 0.1643 | 9.5000e-004 | 0.1652 | 0.0436 | 8.7000e-004 | 0.0445 | | 133.3650 | 133.3650 | 3.2200e-003 | | 133.4453 |
| **Total** | **0.0648** | **0.0339** | **0.4482** | **1.3400e-003** | **0.1643** | **9.5000e-004** | **0.1652** | **0.0436** | **8.7000e-004** | **0.0445** | | **133.3650** | **133.3650** | **3.2200e-003** | | **133.4453** |

## 3.4 Building Construction - 2026

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

## 3.4 Building Construction - 2026

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.1539 | 5.7434 | 1.0124 | 0.0207 | 0.5154 | 5.8400e-003 | 0.5213 | 0.1484 | 5.5800e-003 | 0.1540 | | 2,168.9105 | 2,168.9105 | 0.1600 | | 2,172.9109 |
| Worker | 0.7521 | 0.3934 | 5.1993 | 0.0155 | 1.9058 | 0.0110 | 1.9168 | 0.5055 | 0.0101 | 0.5156 | | 1,547.0335 | 1,547.0335 | 0.0373 | | 1,547.9659 |
| **Total** | **0.9059** | **6.1368** | **6.2116** | **0.0363** | **2.4213** | **0.0168** | **2.4381** | **0.6540** | **0.0157** | **0.6696** | | **3,715.9440** | **3,715.9440** | **0.1973** | | **3,720.8768** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

## 3.4 Building Construction - 2026

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.1539 | 5.7434 | 1.0124 | 0.0207 | 0.5154 | 5.8400e-003 | 0.5213 | 0.1484 | 5.5800e-003 | 0.1540 | | 2,168.9105 | 2,168.9105 | 0.1600 | | 2,172.9109 |
| Worker | 0.7521 | 0.3934 | 5.1993 | 0.0155 | 1.9058 | 0.0110 | 1.9168 | 0.5055 | 0.0101 | 0.5156 | | 1,547.0335 | 1,547.0335 | 0.0373 | | 1,547.9659 |
| **Total** | **0.9059** | **6.1368** | **6.2116** | **0.0363** | **2.4213** | **0.0168** | **2.4381** | **0.6540** | **0.0157** | **0.6696** | | **3,715.9440** | **3,715.9440** | **0.1973** | | **3,720.8768** |

## 3.4 Building Construction - 2027

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

## 3.4 Building Construction - 2027

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.1507 | 5.6832 | 0.9748 | 0.0206 | 0.5155 | 5.7700e-003 | 0.5212 | 0.1484 | 5.5200e-003 | 0.1540 | | 2,156.2426 | 2,156.2426 | 0.1619 | | 2,160.2906 |
| Worker | 0.7083 | 0.3592 | 4.8372 | 0.0150 | 1.9058 | 0.0104 | 1.9163 | 0.5055 | 9.6000e-003 | 0.5151 | | 1,495.6499 | 1,495.6499 | 0.0338 | | 1,496.4939 |
| **Total** | **0.8589** | **6.0425** | **5.8120** | **0.0356** | **2.4213** | **0.0162** | **2.4375** | **0.6540** | **0.0151** | **0.6691** | | **3,651.8925** | **3,651.8925** | **0.1957** | | **3,656.7845** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

## 3.4 Building Construction - 2027

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.1507 | 5.6832 | 0.9748 | 0.0206 | 0.5155 | 5.7700e-003 | 0.5212 | 0.1484 | 5.5200e-003 | 0.1540 | | 2,156.2426 | 2,156.2426 | 0.1619 | | 2,160.2906 |
| Worker | 0.7083 | 0.3592 | 4.8372 | 0.0150 | 1.9058 | 0.0104 | 1.9163 | 0.5055 | 9.6000e-003 | 0.5151 | | 1,495.6499 | 1,495.6499 | 0.0338 | | 1,496.4939 |
| **Total** | **0.8589** | **6.0425** | **5.8120** | **0.0356** | **2.4213** | **0.0162** | **2.4375** | **0.6540** | **0.0151** | **0.6691** | | **3,651.8925** | **3,651.8925** | **0.1957** | | **3,656.7845** |

## 3.4 Building Construction - 2028

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

## 3.4 Building Construction - 2028

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.1484 | 5.6357 | 0.9479 | 0.0205 | 0.5155 | 5.7200e-003 | 0.5212 | 0.1485 | 5.4700e-003 | 0.1539 | | 2,146.2517 | 2,146.2517 | 0.1632 | | 2,150.3308 |
| Worker | 0.6642 | 0.3283 | 4.5200 | 0.0146 | 1.9058 | 9.7100e-003 | 1.9155 | 0.5055 | 8.9400e-003 | 0.5145 | | 1,450.1612 | 1,450.1612 | 0.0307 | | 1,450.9291 |
| **Total** | **0.8125** | **5.9640** | **5.4679** | **0.0351** | **2.4213** | **0.0154** | **2.4367** | **0.6540** | **0.0144** | **0.6684** | | **3,596.4128** | **3,596.4128** | **0.1939** | | **3,601.2598** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

## 3.4 Building Construction - 2028

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.1484 | 5.6357 | 0.9479 | 0.0205 | 0.5155 | 5.7200e-003 | 0.5212 | 0.1485 | 5.4700e-003 | 0.1539 | | 2,146.2517 | 2,146.2517 | 0.1632 | | 2,150.3308 |
| Worker | 0.6642 | 0.3283 | 4.5200 | 0.0146 | 1.9058 | 9.7100e-003 | 1.9155 | 0.5055 | 8.9400e-003 | 0.5145 | | 1,450.1612 | 1,450.1612 | 0.0307 | | 1,450.9291 |
| **Total** | **0.8125** | **5.9640** | **5.4679** | **0.0351** | **2.4213** | **0.0154** | **2.4367** | **0.6540** | **0.0144** | **0.6684** | | **3,596.4128** | **3,596.4128** | **0.1939** | | **3,601.2598** |

## 3.4 Building Construction - 2029

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

## 3.4 Building Construction - 2029

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.1462 | 5.5891 | 0.9236 | 0.0204 | 0.5155 | 5.6600e-003 | 0.5211 | 0.1485 | 5.4100e-003 | 0.1539 | | 2,137.4963 | 2,137.4963 | 0.1642 | | 2,141.6000 |
| Worker | 0.6193 | 0.2998 | 4.2198 | 0.0141 | 1.9058 | 9.0500e-003 | 1.9149 | 0.5055 | 8.3200e-003 | 0.5138 | | 1,409.9055 | 1,409.9055 | 0.0278 | | 1,410.6014 |
| **Total** | **0.7655** | **5.8889** | **5.1434** | **0.0346** | **2.4213** | **0.0147** | **2.4360** | **0.6540** | **0.0137** | **0.6677** | | **3,547.4018** | **3,547.4018** | **0.1920** | | **3,552.2015** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

## 3.4 Building Construction - 2029

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.1462 | 5.5891 | 0.9236 | 0.0204 | 0.5155 | 5.6600e-003 | 0.5211 | 0.1485 | 5.4100e-003 | 0.1539 | | 2,137.4963 | 2,137.4963 | 0.1642 | | 2,141.6000 |
| Worker | 0.6193 | 0.2998 | 4.2198 | 0.0141 | 1.9058 | 9.0500e-003 | 1.9149 | 0.5055 | 8.3200e-003 | 0.5138 | | 1,409.9055 | 1,409.9055 | 0.0278 | | 1,410.6014 |
| **Total** | **0.7655** | **5.8889** | **5.1434** | **0.0346** | **2.4213** | **0.0147** | **2.4360** | **0.6540** | **0.0137** | **0.6677** | | **3,547.4018** | **3,547.4018** | **0.1920** | | **3,552.2015** |

## 3.5 Paving - 2029

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.9152 | 8.5816 | 14.5780 | 0.0228 | | 0.4185 | 0.4185 | | 0.3850 | 0.3850 | | 2,206.7452 | 2,206.7452 | 0.7137 | | 2,224.5878 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **0.9152** | **8.5816** | **14.5780** | **0.0228** | | **0.4185** | **0.4185** | | **0.3850** | **0.3850** | | **2,206.7452** | **2,206.7452** | **0.7137** | | **2,224.5878** |

## 3.5 Paving - 2029

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0400 | 0.0194 | 0.2728 | 9.1000e-004 | 0.1232 | 5.8000e-004 | 0.1238 | 0.0327 | 5.4000e-004 | 0.0332 | | 91.1577 | 91.1577 | 1.8000e-003 | | 91.2027 |
| **Total** | **0.0400** | **0.0194** | **0.2728** | **9.1000e-004** | **0.1232** | **5.8000e-004** | **0.1238** | **0.0327** | **5.4000e-004** | **0.0332** | | **91.1577** | **91.1577** | **1.8000e-003** | | **91.2027** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.9152 | 8.5816 | 14.5780 | 0.0228 | | 0.4185 | 0.4185 | | 0.3850 | 0.3850 | 0.0000 | 2,206.7452 | 2,206.7452 | 0.7137 | | 2,224.5878 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **0.9152** | **8.5816** | **14.5780** | **0.0228** | | **0.4185** | **0.4185** | | **0.3850** | **0.3850** | **0.0000** | **2,206.7452** | **2,206.7452** | **0.7137** | | **2,224.5878** |

## 3.5 Paving - 2029

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0400 | 0.0194 | 0.2728 | 9.1000e-004 | 0.1232 | 5.8000e-004 | 0.1238 | 0.0327 | 5.4000e-004 | 0.0332 | | 91.1577 | 91.1577 | 1.8000e-003 | | 91.2027 |
| **Total** | **0.0400** | **0.0194** | **0.2728** | **9.1000e-004** | **0.1232** | **5.8000e-004** | **0.1238** | **0.0327** | **5.4000e-004** | **0.0332** | | **91.1577** | **91.1577** | **1.8000e-003** | | **91.2027** |

## 3.6 Architectural Coating - 2029

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 42.0538 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **42.2246** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

## 3.6 Architectural Coating - 2029

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.1228 | 0.0594 | 0.8367 | 2.8000e-003 | 0.3779 | 1.7900e-003 | 0.3797 | 0.1002 | 1.6500e-003 | 0.1019 | | 279.5502 | 279.5502 | 5.5200e-003 | | 279.6882 |
| **Total** | **0.1228** | **0.0594** | **0.8367** | **2.8000e-003** | **0.3779** | **1.7900e-003** | **0.3797** | **0.1002** | **1.6500e-003** | **0.1019** | | **279.5502** | **279.5502** | **5.5200e-003** | | **279.6882** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 42.0538 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **42.2246** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

## 3.6 Architectural Coating - 2029

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.1228 | 0.0594 | 0.8367 | 2.8000e-003 | 0.3779 | 1.7900e-003 | 0.3797 | 0.1002 | 1.6500e-003 | 0.1019 | | 279.5502 | 279.5502 | 5.5200e-003 | | 279.6882 |
| **Total** | **0.1228** | **0.0594** | **0.8367** | **2.8000e-003** | **0.3779** | **1.7900e-003** | **0.3797** | **0.1002** | **1.6500e-003** | **0.1019** | | **279.5502** | **279.5502** | **5.5200e-003** | | **279.6882** |

# 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 3.0600 | 7.6467 | 30.6304 | 0.0981 | 10.1020 | 0.0741 | 10.1762 | 2.6939 | 0.0688 | 2.7628 | | 9,922.818 7 | 9,922.818 7 | 0.4740 | | 9,934.668 5 |
| Unmitigated | 3.1124 | 7.9190 | 32.5217 | 0.1049 | 10.8507 | 0.0789 | 10.9296 | 2.8936 | 0.0733 | 2.9668 | | 10,604.06 60 | 10,604.06 60 | 0.4963 | | 10,616.47 36 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Apartments Low Rise | 388.81 | 422.44 | 358.13 | 1,114,077 | 1,037,206 |
| City Park | 14.93 | 179.73 | 132.25 | 117,913 | 109,777 |
| Single Family Housing | 1,190.00 | 1,238.75 | 1077.50 | 3,380,009 | 3,146,789 |
| Total | 1,593.74 | 1,840.92 | 1,567.88 | 4,611,999 | 4,293,771 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Apartments Low Rise | 10.80 | 7.30 | 7.50 | 42.30 | 19.60 | 38.10 | 86 | 11 | 3 |
| City Park | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 66 | 28 | 6 |
| Single Family Housing | 10.80 | 7.30 | 7.50 | 42.30 | 19.60 | 38.10 | 86 | 11 | 3 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Low Rise | 0.521500 | 0.214600 | 0.168100 | 0.056900 | 0.000800 | 0.000900 | 0.007500 | 0.020300 | 0.000000 | 0.004400 | 0.002500 | 0.000200 | 0.002300 |
| City Park | 0.521500 | 0.214600 | 0.168100 | 0.056900 | 0.000800 | 0.000900 | 0.007500 | 0.020300 | 0.000000 | 0.004400 | 0.002500 | 0.000200 | 0.002300 |
| Single Family Housing | 0.521500 | 0.214600 | 0.168100 | 0.056900 | 0.000800 | 0.000900 | 0.007500 | 0.020300 | 0.000000 | 0.004400 | 0.002500 | 0.000200 | 0.002300 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.1141 | 0.9754 | 0.4150 | 6.2300e-003 | | 0.0789 | 0.0789 | | 0.0789 | 0.0789 | | 1,245.1262 | 1,245.1262 | 0.0239 | 0.0228 | 1,252.5253 |
| NaturalGas Unmitigated | 0.1212 | 1.0357 | 0.4407 | 6.6100e-003 | | 0.0837 | 0.0837 | | 0.0837 | 0.0837 | | 1,322.2260 | 1,322.2260 | 0.0253 | 0.0242 | 1,330.0833 |

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| Apartments Low Rise | 2285.07 | 0.0246 | 0.2106 | 0.0896 | 1.3400e-003 | | 0.0170 | 0.0170 | | 0.0170 | 0.0170 | | 268.8320 | 268.8320 | 5.1500e-003 | 4.9300e-003 | 270.4295 |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 8953.85 | 0.0966 | 0.8252 | 0.3511 | 5.2700e-003 | | 0.0667 | 0.0667 | | 0.0667 | 0.0667 | | 1,053.3940 | 1,053.3940 | 0.0202 | 0.0193 | 1,059.6538 |
| **Total** | | **0.1212** | **1.0358** | **0.4407** | **6.6100e-003** | | **0.0837** | **0.0837** | | **0.0837** | **0.0837** | | **1,322.2260** | **1,322.2260** | **0.0253** | **0.0242** | **1,330.0833** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| Apartments Low Rise | 2.16724 | 0.0234 | 0.1997 | 0.0850 | 1.2700e-003 | | 0.0162 | 0.0162 | | 0.0162 | 0.0162 | | 254.9697 | 254.9697 | 4.8900e-003 | 4.6700e-003 | 256.4849 |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 8.41633 | 0.0908 | 0.7756 | 0.3301 | 4.9500e-003 | | 0.0627 | 0.0627 | | 0.0627 | 0.0627 | | 990.1565 | 990.1565 | 0.0190 | 0.0182 | 996.0405 |
| **Total** | | **0.1141** | **0.9754** | **0.4150** | **6.2200e-003** | | **0.0789** | **0.0789** | | **0.0789** | **0.0789** | | **1,245.1262** | **1,245.1262** | **0.0239** | **0.0228** | **1,252.5253** |

## 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 7.3852 | 1.8534 | 15.8810 | 0.0115 | | 0.2199 | 0.2199 | | 0.2199 | 0.2199 | 0.0000 | 2,170.3942 | 2,170.3942 | 0.0673 | 0.0393 | 2,183.7838 |
| Unmitigated | 25.2546 | 4.5008 | 178.1619 | 0.5410 | | 26.6931 | 26.6931 | | 26.6931 | 26.6931 | 3,907.4486 | 2,170.3942 | 6,077.8428 | 18.3338 | 0.0393 | 6,547.8956 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.6337 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 6.0996 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 18.0659 | 4.3261 | 162.9953 | 0.5402 | | 26.6090 | 26.6090 | | 26.6090 | 26.6090 | 3,907.4486 | 2,143.0588 | 6,050.5075 | 18.3076 | 0.0393 | 6,519.9058 |
| Landscaping | 0.4554 | 0.1747 | 15.1667 | 8.0000e-004 | | 0.0842 | 0.0842 | | 0.0842 | 0.0842 | | 27.3354 | 27.3354 | 0.0262 | | 27.9898 |
| **Total** | **25.2546** | **4.5008** | **178.1619** | **0.5410** | | **26.6931** | **26.6931** | | **26.6931** | **26.6931** | **3,907.4486** | **2,170.3942** | **6,077.8428** | **18.3338** | **0.0393** | **6,547.8956** |

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.6337 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 6.0996 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.1965 | 1.6787 | 0.7144 | 0.0107 | | 0.1357 | 0.1357 | | 0.1357 | 0.1357 | 0.0000 | 2,143.0588 | 2,143.0588 | 0.0411 | 0.0393 | 2,155.7940 |
| Landscaping | 0.4554 | 0.1747 | 15.1667 | 8.0000e-004 | | 0.0842 | 0.0842 | | 0.0842 | 0.0842 | | 27.3354 | 27.3354 | 0.0262 | | 27.9898 |
| **Total** | **7.3852** | **1.8534** | **15.8810** | **0.0115** | | **0.2199** | **0.2199** | | **0.2199** | **0.2199** | **0.0000** | **2,170.3942** | **2,170.3942** | **0.0673** | **0.0393** | **2,183.7838** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

# 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

### Fire Pumps and Emergency Generators

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

### Boilers

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

### User Defined Equipment

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

# CalEEMod Output

# Phase 2 Construction and Operations

# (Winter Daily)

# Lacey Ranch Master Plan Phase 2 Const and Ops

## Kings County, Winter

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| City Park | 7.90 | Acre | 7.90 | 344,124.00 | 0 |
| Apartments Low Rise | 59.00 | Dwelling Unit | 4.88 | 59,000.00 | 169 |
| Single Family Housing | 125.00 | Dwelling Unit | 31.07 | 225,000.00 | 358 |

### 1.2 Other Project Characteristics

**Urbanization** Urban **Wind Speed (m/s)** 2.2 **Precipitation Freq (Days)** 37

**Climate Zone** 3 **Operational Year** 2026

**Utility Company** Pacific Gas & Electric Company

**CO2 Intensity (lb/MWhr)** 290 **CH4 Intensity (lb/MWhr)** 0.022 **N2O Intensity (lb/MWhr)** 0.005

### 1.3 User Entered Comments & Non-Default Data

Lacey Ranch Master Plan Phase 2 Const and Ops - Kings County, Winter

Project Characteristics - PG&E Intensity Factors

Land Use - Project acres

Construction Phase -

Architectural Coating - Rule 4601 Architectural Coatings compliance

Vehicle Trips - ITE 10th Ed Trip Gen SFR 9.44, 9.54, 8.55, Apt 7.32, 8.14, 6.28

Woodstoves - Rule 4901 Residential Woodburning hearths allowed 2 per acre

Area Coating - Rule 4601 Architectural Coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Architectural Coatings

Energy Mitigation - 2019 Title 24

Water Mitigation - CalGreen indoor water savings and MWELO outdoor savings

Waste Mitigation - Calrecycle 75% diversion mandate

Fleet Mix - SJVAPCD Residential Fleet Mix for 2026

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblArchitecturalCoating | EF_Residential_Exterior | 150.00 | 65.00 |
| tblArchitecturalCoating | EF_Residential_Interior | 150.00 | 65.00 |
| tblAreaCoating | Area_EF_Residential_Exterior | 150 | 65 |
| tblAreaCoating | Area_EF_Residential_Interior | 150 | 65 |
| tblFleetMix | HHD | 0.17 | 0.02 |
| tblFleetMix | HHD | 0.17 | 0.02 |
| tblFleetMix | HHD | 0.17 | 0.02 |
| tblFleetMix | LDA | 0.52 | 0.52 |
| tblFleetMix | LDA | 0.52 | 0.52 |
| tblFleetMix | LDA | 0.52 | 0.52 |
| tblFleetMix | LDT1 | 0.03 | 0.21 |

| | | | |
|---|---|---|---|
| tblFleetMix | LDT1 | 0.03 | 0.21 |
| tblFleetMix | LDT1 | 0.03 | 0.21 |
| tblFleetMix | LDT2 | 0.15 | 0.17 |
| tblFleetMix | LDT2 | 0.15 | 0.17 |
| tblFleetMix | LDT2 | 0.15 | 0.17 |
| tblFleetMix | LHD1 | 0.01 | 8.0000e-004 |
| tblFleetMix | LHD1 | 0.01 | 8.0000e-004 |
| tblFleetMix | LHD1 | 0.01 | 8.0000e-004 |
| tblFleetMix | LHD2 | 3.8430e-003 | 9.0000e-004 |
| tblFleetMix | LHD2 | 3.8430e-003 | 9.0000e-004 |
| tblFleetMix | LHD2 | 3.8430e-003 | 9.0000e-004 |
| tblFleetMix | MCY | 5.2980e-003 | 2.5000e-003 |
| tblFleetMix | MCY | 5.2980e-003 | 2.5000e-003 |
| tblFleetMix | MCY | 5.2980e-003 | 2.5000e-003 |
| tblFleetMix | MDV | 0.10 | 0.06 |
| tblFleetMix | MDV | 0.10 | 0.06 |
| tblFleetMix | MDV | 0.10 | 0.06 |
| tblFleetMix | MH | 5.5700e-004 | 2.3000e-003 |
| tblFleetMix | MH | 5.5700e-004 | 2.3000e-003 |
| tblFleetMix | MH | 5.5700e-004 | 2.3000e-003 |
| tblFleetMix | MHD | 0.01 | 7.5000e-003 |
| tblFleetMix | MHD | 0.01 | 7.5000e-003 |
| tblFleetMix | MHD | 0.01 | 7.5000e-003 |
| tblFleetMix | OBUS | 1.6570e-003 | 0.00 |
| tblFleetMix | OBUS | 1.6570e-003 | 0.00 |
| tblFleetMix | OBUS | 1.6570e-003 | 0.00 |
| tblFleetMix | SBUS | 8.7300e-004 | 2.0000e-004 |

| | | | |
|---|---|---|---|
| tblFleetMix | SBUS | 8.7300e-004 | 2.0000e-004 |
| tblFleetMix | SBUS | 8.7300e-004 | 2.0000e-004 |
| tblFleetMix | UBUS | 1.5200e-003 | 4.4000e-003 |
| tblFleetMix | UBUS | 1.5200e-003 | 4.4000e-003 |
| tblFleetMix | UBUS | 1.5200e-003 | 4.4000e-003 |
| tblLandUse | LotAcreage | 3.69 | 4.88 |
| tblLandUse | LotAcreage | 40.58 | 31.07 |
| tblProjectCharacteristics | CH4IntensityFactor | 0.029 | 0.022 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 290 |
| tblProjectCharacteristics | N2OIntensityFactor | 0.006 | 0.005 |

# 2.0 Emissions Summary

## 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2026 | 2.9634 | 27.9829 | 26.7026 | 0.0632 | 18.2141 | 1.1318 | 19.3018 | 9.9699 | 1.0413 | 10.9705 | 0.0000 | 6,125.1821 | 6,125.1821 | 1.9460 | 0.0000 | 6,173.8314 |
| 2027 | 2.2075 | 18.5978 | 21.2304 | 0.0601 | 2.4213 | 0.5438 | 2.9651 | 0.6540 | 0.5115 | 1.1654 | 0.0000 | 5,956.0784 | 5,956.0784 | 0.8145 | 0.0000 | 5,976.4401 |
| 2028 | 2.1642 | 18.5119 | 20.9276 | 0.0596 | 2.4213 | 0.5431 | 2.9644 | 0.6540 | 0.5107 | 1.1647 | 0.0000 | 5,906.8509 | 5,906.8509 | 0.8133 | 0.0000 | 5,927.1828 |
| 2029 | 42.3432 | 18.4297 | 20.6421 | 0.0592 | 2.4213 | 0.5423 | 2.9636 | 0.6540 | 0.5101 | 1.1640 | 0.0000 | 5,863.2856 | 5,863.2856 | 0.8119 | 0.0000 | 5,883.5837 |
| **Maximum** | **42.3432** | **27.9829** | **26.7026** | **0.0632** | **18.2141** | **1.1318** | **19.3018** | **9.9699** | **1.0413** | **10.9705** | **0.0000** | **6,125.1821** | **6,125.1821** | **1.9460** | **0.0000** | **6,173.8314** |

## 2.1 Overall Construction (Maximum Daily Emission)

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2026 | 2.9634 | 27.9829 | 26.7026 | 0.0632 | 8.2777 | 1.1318 | 9.3653 | 4.5080 | 1.0413 | 5.5087 | 0.0000 | 6,125.1820 | 6,125.1820 | 1.9460 | 0.0000 | 6,173.8313 |
| 2027 | 2.2075 | 18.5978 | 21.2304 | 0.0601 | 2.4213 | 0.5438 | 2.9651 | 0.6540 | 0.5115 | 1.1654 | 0.0000 | 5,956.0784 | 5,956.0784 | 0.8145 | 0.0000 | 5,976.4401 |
| 2028 | 2.1642 | 18.5119 | 20.9276 | 0.0596 | 2.4213 | 0.5431 | 2.9644 | 0.6540 | 0.5107 | 1.1647 | 0.0000 | 5,906.8509 | 5,906.8509 | 0.8133 | 0.0000 | 5,927.1828 |
| 2029 | 42.3432 | 18.4297 | 20.6421 | 0.0592 | 2.4213 | 0.5423 | 2.9636 | 0.6540 | 0.5101 | 1.1640 | 0.0000 | 5,863.2856 | 5,863.2856 | 0.8119 | 0.0000 | 5,883.5837 |
| **Maximum** | **42.3432** | **27.9829** | **26.7026** | **0.0632** | **8.2777** | **1.1318** | **9.3653** | **4.5080** | **1.0413** | **5.5087** | **0.0000** | **6,125.1820** | **6,125.1820** | **1.9460** | **0.0000** | **6,173.8313** |

| | **ROG** | **NOx** | **CO** | **SO2** | **Fugitive PM10** | **Exhaust PM10** | **PM10 Total** | **Fugitive PM2.5** | **Exhaust PM2.5** | **PM2.5 Total** | **Bio- CO2** | **NBio-CO2** | **Total CO2** | **CH4** | **N20** | **CO2e** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **39.00** | **0.00** | **35.24** | **45.78** | **0.00** | **37.76** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 25.2546 | 4.5008 | 178.1619 | 0.5410 | | 26.6931 | 26.6931 | | 26.6931 | 26.6931 | 3,907.4486 | 2,170.3942 | 6,077.8428 | 18.3338 | 0.0393 | 6,547.8956 |
| Energy | 0.1212 | 1.0357 | 0.4407 | 6.6100e-003 | | 0.0837 | 0.0837 | | 0.0837 | 0.0837 | | 1,322.2260 | 1,322.2260 | 0.0253 | 0.0242 | 1,330.0833 |
| Mobile | 2.1939 | 8.4035 | 28.8067 | 0.0938 | 10.8507 | 0.0790 | 10.9297 | 2.8936 | 0.0733 | 2.9669 | | 9,498.3489 | 9,498.3489 | 0.4948 | | 9,510.7185 |
| **Total** | **27.5697** | **13.9400** | **207.4093** | **0.6414** | **10.8507** | **26.8558** | **37.7066** | **2.8936** | **26.8502** | **29.7438** | **3,907.4486** | **12,990.9691** | **16,898.4177** | **18.8539** | **0.0635** | **17,388.6974** |

### Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 7.3852 | 1.8534 | 15.8810 | 0.0115 | | 0.2199 | 0.2199 | | 0.2199 | 0.2199 | 0.0000 | 2,170.3942 | 2,170.3942 | 0.0673 | 0.0393 | 2,183.7838 |
| Energy | 0.1141 | 0.9754 | 0.4150 | 6.2300e-003 | | 0.0789 | 0.0789 | | 0.0789 | 0.0789 | | 1,245.1262 | 1,245.1262 | 0.0239 | 0.0228 | 1,252.5253 |
| Mobile | 2.1468 | 8.0960 | 27.3446 | 0.0878 | 10.1020 | 0.0742 | 10.1762 | 2.6939 | 0.0689 | 2.7628 | | 8,888.8190 | 8,888.8190 | 0.4748 | | 8,900.6884 |
| **Total** | **9.6461** | **10.9248** | **43.6406** | **0.1055** | **10.1020** | **0.3730** | **10.4750** | **2.6939** | **0.3676** | **3.0616** | **0.0000** | **12,304.3394** | **12,304.3394** | **0.5659** | **0.0621** | **12,336.9976** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **65.01** | **21.63** | **78.96** | **83.55** | **6.90** | **98.61** | **72.22** | **6.90** | **98.63** | **89.71** | **100.00** | **5.29** | **27.19** | **97.00** | **2.22** | **29.05** |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 1/1/2026 | 2/11/2026 | 5 | 30 | |
| 2 | Grading | Grading | 2/12/2026 | 5/27/2026 | 5 | 75 | |
| 3 | Building Construction | Building Construction | 5/28/2026 | 3/28/2029 | 5 | 740 | |
| 4 | Paving | Paving | 3/29/2029 | 6/13/2029 | 5 | 55 | |
| 5 | Architectural Coating | Architectural Coating | 6/14/2029 | 8/29/2029 | 5 | 55 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 187.5**

**Acres of Paving: 0**

**Residential Indoor: 575,100; Residential Outdoor: 191,700; Non-Residential Indoor: 300; Non-Residential Outdoor: 100; Striped Parking Area: 0 (Architectural Coating – sqft)**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

## Trips and VMT

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 232.00 | 76.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 46.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

## 3.2 Site Preparation - 2026

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.4727 | 25.2339 | 17.9118 | 0.0381 | | 1.0868 | 1.0868 | | 0.9999 | 0.9999 | | 3,689.1037 | 3,689.1037 | 1.1931 | | 3,718.9320 |
| **Total** | **2.4727** | **25.2339** | **17.9118** | **0.0381** | **18.0663** | **1.0868** | **19.1531** | **9.9307** | **0.9999** | **10.9305** | | **3,689.1037** | **3,689.1037** | **1.1931** | | **3,718.9320** |

## 3.2 Site Preparation - 2026

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0559 | 0.0360 | 0.3343 | 1.0600e-003 | 0.1479 | 8.5000e-004 | 0.1487 | 0.0392 | 7.8000e-004 | 0.0400 | | 105.2106 | 105.2106 | 2.4900e-003 | | 105.2729 |
| **Total** | **0.0559** | **0.0360** | **0.3343** | **1.0600e-003** | **0.1479** | **8.5000e-004** | **0.1487** | **0.0392** | **7.8000e-004** | **0.0400** | | **105.2106** | **105.2106** | **2.4900e-003** | | **105.2729** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.1298 | 0.0000 | 8.1298 | 4.4688 | 0.0000 | 4.4688 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.4727 | 25.2339 | 17.9118 | 0.0381 | | 1.0868 | 1.0868 | | 0.9999 | 0.9999 | 0.0000 | 3,689.1037 | 3,689.1037 | 1.1931 | | 3,718.9320 |
| **Total** | **2.4727** | **25.2339** | **17.9118** | **0.0381** | **8.1298** | **1.0868** | **9.2166** | **4.4688** | **0.9999** | **5.4687** | **0.0000** | **3,689.1037** | **3,689.1037** | **1.1931** | | **3,718.9320** |

## 3.2 Site Preparation - 2026

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0559 | 0.0360 | 0.3343 | 1.0600e-003 | 0.1479 | 8.5000e-004 | 0.1487 | 0.0392 | 7.8000e-004 | 0.0400 | | 105.2106 | 105.2106 | 2.4900e-003 | | 105.2729 |
| **Total** | **0.0559** | **0.0360** | **0.3343** | **1.0600e-003** | **0.1479** | **8.5000e-004** | **0.1487** | **0.0392** | **7.8000e-004** | **0.0400** | | **105.2106** | **105.2106** | **2.4900e-003** | | **105.2729** |

## 3.3 Grading - 2026

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.9012 | 27.9429 | 26.3311 | 0.0621 | | 1.1309 | 1.1309 | | 1.0404 | 1.0404 | | 6,008.2814 | 6,008.2814 | 1.9432 | | 6,056.8614 |
| **Total** | **2.9012** | **27.9429** | **26.3311** | **0.0621** | **8.6733** | **1.1309** | **9.8042** | **3.5965** | **1.0404** | **4.6369** | | **6,008.2814** | **6,008.2814** | **1.9432** | | **6,056.8614** |

## 3.3 Grading - 2026

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0621 | 0.0400 | 0.3715 | 1.1700e-003 | 0.1643 | 9.5000e-004 | 0.1652 | 0.0436 | 8.7000e-004 | 0.0445 | | 116.9006 | 116.9006 | 2.7700e-003 | | 116.9699 |
| **Total** | **0.0621** | **0.0400** | **0.3715** | **1.1700e-003** | **0.1643** | **9.5000e-004** | **0.1652** | **0.0436** | **8.7000e-004** | **0.0445** | | **116.9006** | **116.9006** | **2.7700e-003** | | **116.9699** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 3.9030 | 0.0000 | 3.9030 | 1.6184 | 0.0000 | 1.6184 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.9012 | 27.9429 | 26.3311 | 0.0621 | | 1.1309 | 1.1309 | | 1.0404 | 1.0404 | 0.0000 | 6,008.2814 | 6,008.2814 | 1.9432 | | 6,056.8614 |
| **Total** | **2.9012** | **27.9429** | **26.3311** | **0.0621** | **3.9030** | **1.1309** | **5.0339** | **1.6184** | **1.0404** | **2.6589** | **0.0000** | **6,008.2814** | **6,008.2814** | **1.9432** | | **6,056.8614** |

## 3.3 Grading - 2026

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0621 | 0.0400 | 0.3715 | 1.1700e-003 | 0.1643 | 9.5000e-004 | 0.1652 | 0.0436 | 8.7000e-004 | 0.0445 | | 116.9006 | 116.9006 | 2.7700e-003 | | 116.9699 |
| **Total** | **0.0621** | **0.0400** | **0.3715** | **1.1700e-003** | **0.1643** | **9.5000e-004** | **0.1652** | **0.0436** | **8.7000e-004** | **0.0445** | | **116.9006** | **116.9006** | **2.7700e-003** | | **116.9699** |

## 3.4 Building Construction - 2026

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

## 3.4 Building Construction - 2026

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.1626 | 5.7675 | 1.1903 | 0.0201 | 0.5154 | 5.9200e-003 | 0.5214 | 0.1484 | 5.6600e-003 | 0.1541 | | 2,100.4333 | 2,100.4333 | 0.1822 | | 2,104.9889 |
| Worker | 0.7205 | 0.4641 | 4.3090 | 0.0136 | 1.9058 | 0.0110 | 1.9168 | 0.5055 | 0.0101 | 0.5156 | | 1,356.0471 | 1,356.0471 | 0.0322 | | 1,356.8509 |
| **Total** | **0.8831** | **6.2316** | **5.4993** | **0.0337** | **2.4213** | **0.0169** | **2.4382** | **0.6540** | **0.0158** | **0.6697** | | **3,456.4804** | **3,456.4804** | **0.2144** | | **3,461.8398** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

## 3.4 Building Construction - 2026

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.1626 | 5.7675 | 1.1903 | 0.0201 | 0.5154 | 5.9200e-003 | 0.5214 | 0.1484 | 5.6600e-003 | 0.1541 | | 2,100.4333 | 2,100.4333 | 0.1822 | | 2,104.9889 |
| Worker | 0.7205 | 0.4641 | 4.3090 | 0.0136 | 1.9058 | 0.0110 | 1.9168 | 0.5055 | 0.0101 | 0.5156 | | 1,356.0471 | 1,356.0471 | 0.0322 | | 1,356.8509 |
| **Total** | **0.8831** | **6.2316** | **5.4993** | **0.0337** | **2.4213** | **0.0169** | **2.4382** | **0.6540** | **0.0158** | **0.6697** | | **3,456.4804** | **3,456.4804** | **0.2144** | | **3,461.8398** |

## 3.4 Building Construction - 2027

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

## 3.4 Building Construction - 2027

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.1593 | 5.7047 | 1.1484 | 0.0200 | 0.5155 | 5.8500e-003 | 0.5213 | 0.1484 | 5.5900e-003 | 0.1540 | | 2,088.6196 | 2,088.6196 | 0.1845 | | 2,093.2311 |
| Worker | 0.6808 | 0.4235 | 3.9973 | 0.0132 | 1.9058 | 0.0104 | 1.9163 | 0.5055 | 9.6000e-003 | 0.5151 | | 1,310.9844 | 1,310.9844 | 0.0291 | | 1,311.7110 |
| **Total** | **0.8401** | **6.1282** | **5.1457** | **0.0331** | **2.4213** | **0.0163** | **2.4376** | **0.6540** | **0.0152** | **0.6691** | | **3,399.6040** | **3,399.6040** | **0.2135** | | **3,404.9420** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

## 3.4 Building Construction - 2027

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.1593 | 5.7047 | 1.1484 | 0.0200 | 0.5155 | 5.8500e-003 | 0.5213 | 0.1484 | 5.5900e-003 | 0.1540 | | 2,088.6196 | 2,088.6196 | 0.1845 | | 2,093.2311 |
| Worker | 0.6808 | 0.4235 | 3.9973 | 0.0132 | 1.9058 | 0.0104 | 1.9163 | 0.5055 | 9.6000e-003 | 0.5151 | | 1,310.9844 | 1,310.9844 | 0.0291 | | 1,311.7110 |
| **Total** | **0.8401** | **6.1282** | **5.1457** | **0.0331** | **2.4213** | **0.0163** | **2.4376** | **0.6540** | **0.0152** | **0.6691** | | **3,399.6040** | **3,399.6040** | **0.2135** | | **3,404.9420** |

## 3.4 Building Construction - 2028

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

## 3.4 Building Construction - 2028

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.1569 | 5.6555 | 1.1185 | 0.0199 | 0.5155 | 5.8000e-003 | 0.5213 | 0.1485 | 5.5400e-003 | 0.1540 | | 2,079.3464 | 2,079.3464 | 0.1859 | | 2,083.9945 |
| Worker | 0.6399 | 0.3868 | 3.7244 | 0.0128 | 1.9058 | 9.7100e-003 | 1.9155 | 0.5055 | 8.9400e-003 | 0.5145 | | 1,271.0301 | 1,271.0301 | 0.0264 | | 1,271.6902 |
| **Total** | **0.7968** | **6.0423** | **4.8430** | **0.0326** | **2.4213** | **0.0155** | **2.4368** | **0.6540** | **0.0145** | **0.6684** | | **3,350.3766** | **3,350.3766** | **0.2123** | | **3,355.6847** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

## 3.4 Building Construction - 2028

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.1569 | 5.6555 | 1.1185 | 0.0199 | 0.5155 | 5.8000e-003 | 0.5213 | 0.1485 | 5.5400e-003 | 0.1540 | | 2,079.3464 | 2,079.3464 | 0.1859 | | 2,083.9945 |
| Worker | 0.6399 | 0.3868 | 3.7244 | 0.0128 | 1.9058 | 9.7100e-003 | 1.9155 | 0.5055 | 8.9400e-003 | 0.5145 | | 1,271.0301 | 1,271.0301 | 0.0264 | | 1,271.6902 |
| **Total** | **0.7968** | **6.0423** | **4.8430** | **0.0326** | **2.4213** | **0.0155** | **2.4368** | **0.6540** | **0.0145** | **0.6684** | | **3,350.3766** | **3,350.3766** | **0.2123** | | **3,355.6847** |

## 3.4 Building Construction - 2029

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

## 3.4 Building Construction - 2029

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.1546 | 5.6072 | 1.0915 | 0.0198 | 0.5155 | 5.7300e-003 | 0.5212 | 0.1485 | 5.4800e-003 | 0.1539 | | 2,071.1925 | 2,071.1925 | 0.1871 | | 2,075.8697 |
| Worker | 0.5979 | 0.3529 | 3.4659 | 0.0124 | 1.9058 | 9.0500e-003 | 1.9149 | 0.5055 | 8.3200e-003 | 0.5138 | | 1,235.6188 | 1,235.6188 | 0.0239 | | 1,236.2159 |
| **Total** | **0.7526** | **5.9600** | **4.5574** | **0.0322** | **2.4213** | **0.0148** | **2.4361** | **0.6540** | **0.0138** | **0.6678** | | **3,306.8113** | **3,306.8113** | **0.2110** | | **3,312.0857** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3674 | 12.4697 | 16.0847 | 0.0270 | | 0.5276 | 0.5276 | | 0.4963 | 0.4963 | 0.0000 | 2,556.4744 | 2,556.4744 | 0.6010 | | 2,571.4981 |
| **Total** | **1.3674** | **12.4697** | **16.0847** | **0.0270** | | **0.5276** | **0.5276** | | **0.4963** | **0.4963** | **0.0000** | **2,556.4744** | **2,556.4744** | **0.6010** | | **2,571.4981** |

## 3.4 Building Construction - 2029

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.1546 | 5.6072 | 1.0915 | 0.0198 | 0.5155 | 5.7300e-003 | 0.5212 | 0.1485 | 5.4800e-003 | 0.1539 | | 2,071.1925 | 2,071.1925 | 0.1871 | | 2,075.8697 |
| Worker | 0.5979 | 0.3529 | 3.4659 | 0.0124 | 1.9058 | 9.0500e-003 | 1.9149 | 0.5055 | 8.3200e-003 | 0.5138 | | 1,235.6188 | 1,235.6188 | 0.0239 | | 1,236.2159 |
| **Total** | **0.7526** | **5.9600** | **4.5574** | **0.0322** | **2.4213** | **0.0148** | **2.4361** | **0.6540** | **0.0138** | **0.6678** | | **3,306.8113** | **3,306.8113** | **0.2110** | | **3,312.0857** |

## 3.5 Paving - 2029

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.9152 | 8.5816 | 14.5780 | 0.0228 | | 0.4185 | 0.4185 | | 0.3850 | 0.3850 | | 2,206.7452 | 2,206.7452 | 0.7137 | | 2,224.5878 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **0.9152** | **8.5816** | **14.5780** | **0.0228** | | **0.4185** | **0.4185** | | **0.3850** | **0.3850** | | **2,206.7452** | **2,206.7452** | **0.7137** | | **2,224.5878** |

## 3.5 Paving - 2029

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0387 | 0.0228 | 0.2241 | 8.0000e-004 | 0.1232 | 5.8000e-004 | 0.1238 | 0.0327 | 5.4000e-004 | 0.0332 | | 79.8892 | 79.8892 | 1.5400e-003 | | 79.9278 |
| **Total** | **0.0387** | **0.0228** | **0.2241** | **8.0000e-004** | **0.1232** | **5.8000e-004** | **0.1238** | **0.0327** | **5.4000e-004** | **0.0332** | | **79.8892** | **79.8892** | **1.5400e-003** | | **79.9278** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 0.9152 | 8.5816 | 14.5780 | 0.0228 | | 0.4185 | 0.4185 | | 0.3850 | 0.3850 | 0.0000 | 2,206.7452 | 2,206.7452 | 0.7137 | | 2,224.5878 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **0.9152** | **8.5816** | **14.5780** | **0.0228** | | **0.4185** | **0.4185** | | **0.3850** | **0.3850** | **0.0000** | **2,206.7452** | **2,206.7452** | **0.7137** | | **2,224.5878** |

## 3.5 Paving - 2029

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0387 | 0.0228 | 0.2241 | 8.0000e-004 | 0.1232 | 5.8000e-004 | 0.1238 | 0.0327 | 5.4000e-004 | 0.0332 | | 79.8892 | 79.8892 | 1.5400e-003 | | 79.9278 |
| **Total** | **0.0387** | **0.0228** | **0.2241** | **8.0000e-004** | **0.1232** | **5.8000e-004** | **0.1238** | **0.0327** | **5.4000e-004** | **0.0332** | | **79.8892** | **79.8892** | **1.5400e-003** | | **79.9278** |

## 3.6 Architectural Coating - 2029

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 42.0538 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **42.2246** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

## 3.6 Architectural Coating - 2029

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.1186 | 0.0700 | 0.6872 | 2.4600e-003 | 0.3779 | 1.7900e-003 | 0.3797 | 0.1002 | 1.6500e-003 | 0.1019 | | 244.9934 | 244.9934 | 4.7400e-003 | | 245.1118 |
| **Total** | **0.1186** | **0.0700** | **0.6872** | **2.4600e-003** | **0.3779** | **1.7900e-003** | **0.3797** | **0.1002** | **1.6500e-003** | **0.1019** | | **244.9934** | **244.9934** | **4.7400e-003** | | **245.1118** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 42.0538 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1709 | 1.1455 | 1.8091 | 2.9700e-003 | | 0.0515 | 0.0515 | | 0.0515 | 0.0515 | 0.0000 | 281.4481 | 281.4481 | 0.0154 | | 281.8319 |
| **Total** | **42.2246** | **1.1455** | **1.8091** | **2.9700e-003** | | **0.0515** | **0.0515** | | **0.0515** | **0.0515** | **0.0000** | **281.4481** | **281.4481** | **0.0154** | | **281.8319** |

## 3.6 Architectural Coating - 2029

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.1186 | 0.0700 | 0.6872 | 2.4600e-003 | 0.3779 | 1.7900e-003 | 0.3797 | 0.1002 | 1.6500e-003 | 0.1019 | | 244.9934 | 244.9934 | 4.7400e-003 | | 245.1118 |
| **Total** | **0.1186** | **0.0700** | **0.6872** | **2.4600e-003** | **0.3779** | **1.7900e-003** | **0.3797** | **0.1002** | **1.6500e-003** | **0.1019** | | **244.9934** | **244.9934** | **4.7400e-003** | | **245.1118** |

# 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

| Category | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 2.1468 | 8.0960 | 27.3446 | 0.0878 | 10.1020 | 0.0742 | 10.1762 | 2.6939 | 0.0689 | 2.7628 | | 8,888.8190 | 8,888.8190 | 0.4748 | | 8,900.6884 |
| Unmitigated | 2.1939 | 8.4035 | 28.8067 | 0.0938 | 10.8507 | 0.0790 | 10.9297 | 2.8936 | 0.0733 | 2.9669 | | 9,498.3489 | 9,498.3489 | 0.4948 | | 9,510.7185 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Apartments Low Rise | 388.81 | 422.44 | 358.13 | 1,114,077 | 1,037,206 |
| City Park | 14.93 | 179.73 | 132.25 | 117,913 | 109,777 |
| Single Family Housing | 1,190.00 | 1,238.75 | 1077.50 | 3,380,009 | 3,146,789 |
| Total | 1,593.74 | 1,840.92 | 1,567.88 | 4,611,999 | 4,293,771 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Apartments Low Rise | 10.80 | 7.30 | 7.50 | 42.30 | 19.60 | 38.10 | 86 | 11 | 3 |
| City Park | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 66 | 28 | 6 |
| Single Family Housing | 10.80 | 7.30 | 7.50 | 42.30 | 19.60 | 38.10 | 86 | 11 | 3 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Low Rise | 0.521500 | 0.214600 | 0.168100 | 0.056900 | 0.000800 | 0.000900 | 0.007500 | 0.020300 | 0.000000 | 0.004400 | 0.002500 | 0.000200 | 0.002300 |
| City Park | 0.521500 | 0.214600 | 0.168100 | 0.056900 | 0.000800 | 0.000900 | 0.007500 | 0.020300 | 0.000000 | 0.004400 | 0.002500 | 0.000200 | 0.002300 |
| Single Family Housing | 0.521500 | 0.214600 | 0.168100 | 0.056900 | 0.000800 | 0.000900 | 0.007500 | 0.020300 | 0.000000 | 0.004400 | 0.002500 | 0.000200 | 0.002300 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.1141 | 0.9754 | 0.4150 | 6.2300e-003 | | 0.0789 | 0.0789 | | 0.0789 | 0.0789 | | 1,245.1262 | 1,245.1262 | 0.0239 | 0.0228 | 1,252.5253 |
| NaturalGas Unmitigated | 0.1212 | 1.0357 | 0.4407 | 6.6100e-003 | | 0.0837 | 0.0837 | | 0.0837 | 0.0837 | | 1,322.2260 | 1,322.2260 | 0.0253 | 0.0242 | 1,330.0833 |

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| Apartments Low Rise | 2285.07 | 0.0246 | 0.2106 | 0.0896 | 1.3400e-003 | | 0.0170 | 0.0170 | | 0.0170 | 0.0170 | | 268.8320 | 268.8320 | 5.1500e-003 | 4.9300e-003 | 270.4295 |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 8953.85 | 0.0966 | 0.8252 | 0.3511 | 5.2700e-003 | | 0.0667 | 0.0667 | | 0.0667 | 0.0667 | | 1,053.3940 | 1,053.3940 | 0.0202 | 0.0193 | 1,059.6538 |
| **Total** | | **0.1212** | **1.0358** | **0.4407** | **6.6100e-003** | | **0.0837** | **0.0837** | | **0.0837** | **0.0837** | | **1,322.2260** | **1,322.2260** | **0.0253** | **0.0242** | **1,330.0833** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| Apartments Low Rise | 2.16724 | 0.0234 | 0.1997 | 0.0850 | 1.2700e-003 | | 0.0162 | 0.0162 | | 0.0162 | 0.0162 | | 254.9697 | 254.9697 | 4.8900e-003 | 4.6700e-003 | 256.4849 |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 8.41633 | 0.0908 | 0.7756 | 0.3301 | 4.9500e-003 | | 0.0627 | 0.0627 | | 0.0627 | 0.0627 | | 990.1565 | 990.1565 | 0.0190 | 0.0182 | 996.0405 |
| **Total** | | **0.1141** | **0.9754** | **0.4150** | **6.2200e-003** | | **0.0789** | **0.0789** | | **0.0789** | **0.0789** | | **1,245.1262** | **1,245.1262** | **0.0239** | **0.0228** | **1,252.5253** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 7.3852 | 1.8534 | 15.8810 | 0.0115 | | 0.2199 | 0.2199 | | 0.2199 | 0.2199 | 0.0000 | 2,170.3942 | 2,170.3942 | 0.0673 | 0.0393 | 2,183.7838 |
| Unmitigated | 25.2546 | 4.5008 | 178.1619 | 0.5410 | | 26.6931 | 26.6931 | | 26.6931 | 26.6931 | 3,907.4486 | 2,170.3942 | 6,077.8428 | 18.3338 | 0.0393 | 6,547.8956 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.6337 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 6.0996 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 18.0659 | 4.3261 | 162.9953 | 0.5402 | | 26.6090 | 26.6090 | | 26.6090 | 26.6090 | 3,907.4486 | 2,143.0588 | 6,050.5075 | 18.3076 | 0.0393 | 6,519.9058 |
| Landscaping | 0.4554 | 0.1747 | 15.1667 | 8.0000e-004 | | 0.0842 | 0.0842 | | 0.0842 | 0.0842 | | 27.3354 | 27.3354 | 0.0262 | | 27.9898 |
| **Total** | **25.2546** | **4.5008** | **178.1619** | **0.5410** | | **26.6931** | **26.6931** | | **26.6931** | **26.6931** | **3,907.4486** | **2,170.3942** | **6,077.8428** | **18.3338** | **0.0393** | **6,547.8956** |

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.6337 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 6.0996 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.1965 | 1.6787 | 0.7144 | 0.0107 | | 0.1357 | 0.1357 | | 0.1357 | 0.1357 | 0.0000 | 2,143.0588 | 2,143.0588 | 0.0411 | 0.0393 | 2,155.7940 |
| Landscaping | 0.4554 | 0.1747 | 15.1667 | 8.0000e-004 | | 0.0842 | 0.0842 | | 0.0842 | 0.0842 | | 27.3354 | 27.3354 | 0.0262 | | 27.9898 |
| **Total** | **7.3852** | **1.8534** | **15.8810** | **0.0115** | | **0.2199** | **0.2199** | | **0.2199** | **0.2199** | **0.0000** | **2,170.3942** | **2,170.3942** | **0.0673** | **0.0393** | **2,183.7838** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

# 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

### Fire Pumps and Emergency Generators

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

### Boilers

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

### User Defined Equipment

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

# CalEEMod Output

# Phase 3 Construction and Operations

# (Summer Daily)

# Lacey Ranch Master Plan Phase 3 Const and Ops

**Kings County, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Single Family Housing | 125.00 | Dwelling Unit | 31.07 | 225,000.00 | 358 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 37 |
| **Climate Zone** | 3 | | | **Operational Year** | 2030 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 290 | **CH4 Intensity (lb/MWhr)** | 0.022 | **N2O Intensity (lb/MWhr)** | 0.005 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E Intensity Factors

Land Use - Project acres

Construction Phase -

Architectural Coating - Rule 4601 Architectural Coatings compliance

Vehicle Trips - ITE 10th Ed Trip Gen SFR 9.44, 9.54, 8.55

Woodstoves - Rule 4901 Residential Woodburning hearths allowed 2 per acre

Area Coating - Rule 4601 Architectural Coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Architectural Coatings

Energy Mitigation - 2019 Title 24

Water Mitigation - CalGreen indoor water savings and MWELO outdoor savings

Waste Mitigation - Calrecycle 75% diversion mandate

Fleet Mix - SJVAPCD Residential Fleet Mix for 2030

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblArchitecturalCoating | EF_Residential_Exterior | 150.00 | 65.00 |
| tblArchitecturalCoating | EF_Residential_Interior | 150.00 | 65.00 |
| tblAreaCoating | Area_EF_Residential_Exterior | 150 | 65 |
| tblAreaCoating | Area_EF_Residential_Interior | 150 | 65 |
| tblFleetMix | HHD | 0.17 | 0.02 |
| tblFleetMix | LDA | 0.53 | 0.51 |
| tblFleetMix | LDT1 | 0.03 | 0.22 |
| tblFleetMix | LDT2 | 0.16 | 0.17 |
| tblFleetMix | LHD1 | 0.01 | 8.0000e-004 |
| tblFleetMix | LHD2 | 3.5380e-003 | 1.0000e-003 |
| tblFleetMix | MCY | 5.0810e-003 | 2.5000e-003 |
| tblFleetMix | MDV | 0.09 | 0.06 |
| tblFleetMix | MH | 4.8100e-004 | 3.0000e-003 |
| tblFleetMix | MHD | 0.01 | 7.4000e-003 |
| tblFleetMix | OBUS | 1.6250e-003 | 0.00 |
| tblFleetMix | SBUS | 8.2500e-004 | 1.2000e-003 |
| tblFleetMix | UBUS | 1.3720e-003 | 4.4000e-003 |
| tblLandUse | LotAcreage | 40.58 | 31.07 |
| tblProjectCharacteristics | CH4IntensityFactor | 0.029 | 0.022 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 290 |
| tblProjectCharacteristics | N2OIntensityFactor | 0.006 | 0.005 |
| tblVehicleTrips | ST_TR | 9.91 | 9.54 |
| tblVehicleTrips | SU_TR | 8.62 | 8.55 |
| tblVehicleTrips | WD_TR | 9.52 | 9.44 |

## 2.0 Emissions Summary

## 2.1 Overall Construction (Maximum Daily Emission)

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2030 | 3.3301 | 13.8696 | 23.3636 | 0.0711 | 18.2141 | 0.4887 | 18.6514 | 9.9699 | 0.4886 | 10.4072 | 0.0000 | 7,331.5775 | 7,331.5775 | 0.2937 | 0.0000 | 7,338.9195 |
| 2031 | 1.4355 | 8.9256 | 17.0208 | 0.0371 | 0.4578 | 0.1506 | 0.6085 | 0.1234 | 0.1505 | 0.2739 | 0.0000 | 3,521.5949 | 3,521.5949 | 0.1490 | 0.0000 | 3,525.3192 |
| 2032 | 52.4422 | 8.9159 | 16.9727 | 0.0370 | 0.4578 | 0.3311 | 0.6083 | 0.1234 | 0.3311 | 0.3638 | 0.0000 | 3,515.7386 | 3,515.7386 | 0.1487 | 0.0000 | 3,519.4557 |
| **Maximum** | **52.4422** | **13.8696** | **23.3636** | **0.0711** | **18.2141** | **0.4887** | **18.6514** | **9.9699** | **0.4886** | **10.4072** | **0.0000** | **7,331.5775** | **7,331.5775** | **0.2937** | **0.0000** | **7,338.9195** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2030 | 3.3301 | 13.8696 | 23.3636 | 0.0711 | 8.2777 | 0.4887 | 8.7150 | 4.5080 | 0.4886 | 4.9453 | 0.0000 | 7,331.5775 | 7,331.5775 | 0.2937 | 0.0000 | 7,338.9195 |
| 2031 | 1.4355 | 8.9256 | 17.0208 | 0.0371 | 0.4578 | 0.1506 | 0.6085 | 0.1234 | 0.1505 | 0.2739 | 0.0000 | 3,521.5949 | 3,521.5949 | 0.1490 | 0.0000 | 3,525.3192 |
| 2032 | 52.4422 | 8.9159 | 16.9727 | 0.0370 | 0.4578 | 0.3311 | 0.6083 | 0.1234 | 0.3311 | 0.3638 | 0.0000 | 3,515.7386 | 3,515.7386 | 0.1487 | 0.0000 | 3,519.4557 |
| **Maximum** | **52.4422** | **13.8696** | **23.3636** | **0.0711** | **8.2777** | **0.4887** | **8.7150** | **4.5080** | **0.4886** | **4.9453** | **0.0000** | **7,331.5775** | **7,331.5775** | **0.2937** | **0.0000** | **7,338.9195** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | 0.00 | 0.00 | 0.00 | 0.00 | 51.94 | 0.00 | 50.01 | 53.46 | 0.00 | 49.45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 2.2 Overall Operational

**Unmitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 21.2013 | 3.5470 | 151.0229 | 0.4654 | | 23.0290 | 23.0290 | | 23.0290 | 23.0290 | 3,377.0356 | 1,474.4514 | 4,851.4870 | 15.8326 | 0.0267 | 5,255.2547 |
| Energy | 0.0966 | 0.8252 | 0.3511 | 5.2700e-003 | | 0.0667 | 0.0667 | | 0.0667 | 0.0667 | | 1,053.3940 | 1,053.3940 | 0.0202 | 0.0193 | 1,059.6538 |
| Mobile | 1.5724 | 4.2582 | 16.7309 | 0.0621 | 7.2215 | 0.0409 | 7.2624 | 1.9283 | 0.0380 | 1.9663 | | 6,299.2698 | 6,299.2698 | 0.2687 | | 6,305.9877 |
| **Total** | **22.8702** | **8.6303** | **168.1050** | **0.5328** | **7.2215** | **23.1366** | **30.3582** | **1.9283** | **23.1337** | **25.0620** | **3,377.0356** | **8,827.1152** | **12,204.1508** | **16.1215** | **0.0460** | **12,620.8963** |

**Mitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 5.7575 | 1.2590 | 10.7707 | 7.8200e-003 | | 0.1494 | 0.1494 | | 0.1494 | 0.1494 | 0.0000 | 1,474.4514 | 1,474.4514 | 0.0456 | 0.0267 | 1,483.5453 |
| Energy | 0.0908 | 0.7756 | 0.3301 | 4.9500e-003 | | 0.0627 | 0.0627 | | 0.0627 | 0.0627 | | 990.1565 | 990.1565 | 0.0190 | 0.0182 | 996.0405 |
| Mobile | 1.5461 | 4.1186 | 15.7476 | 0.0581 | 6.7233 | 0.0384 | 6.7617 | 1.7953 | 0.0357 | 1.8309 | | 5,892.4003 | 5,892.4003 | 0.2570 | | 5,898.8244 |
| **Total** | **7.3944** | **6.1532** | **26.8483** | **0.0709** | **6.7233** | **0.2505** | **6.9738** | **1.7953** | **0.2478** | **2.0430** | **0.0000** | **8,357.0082** | **8,357.0082** | **0.3215** | **0.0448** | **8,378.4101** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **67.67** | **28.70** | **84.03** | **86.70** | **6.90** | **98.92** | **77.03** | **6.90** | **98.93** | **91.85** | **100.00** | **5.33** | **31.52** | **98.01** | **2.52** | **33.61** |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 1/1/2030 | 1/28/2030 | 5 | 20 | |
| 2 | Grading | Grading | 1/29/2030 | 4/1/2030 | 5 | 45 | |
| 3 | Building Construction | Building Construction | 4/2/2030 | 3/1/2032 | 5 | 500 | |
| 4 | Paving | Paving | 3/2/2032 | 4/19/2032 | 5 | 35 | |
| 5 | Architectural Coating | Architectural Coating | 4/20/2032 | 6/7/2032 | 5 | 35 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 112.5**

**Acres of Paving: 0**

**Residential Indoor: 455,625; Residential Outdoor: 151,875; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 45.00 | 13.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 9.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

## 3.2 Site Preparation - 2030

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.4399 | 13.6680 | 16.2918 | 0.0466 | | 0.4367 | 0.4367 | | 0.4367 | 0.4367 | | 4,409.753 7 | 4,409.753 7 | 0.2176 | | 4,415.193 6 |
| **Total** | **2.4399** | **13.6680** | **16.2918** | **0.0466** | **18.0663** | **0.4367** | **18.5029** | **9.9307** | **0.4367** | **10.3673** | | **4,409.753 7** | **4,409.753 7** | **0.2176** | | **4,415.193 6** |

## 3.2 Site Preparation - 2030

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0445 | 0.0211 | 0.3057 | 1.0700e-003 | 0.1479 | 6.5000e-004 | 0.1485 | 0.0392 | 6.0000e-004 | 0.0398 | | 106.6220 | 106.6220 | 1.9500e-003 | | 106.6709 |
| **Total** | **0.0445** | **0.0211** | **0.3057** | **1.0700e-003** | **0.1479** | **6.5000e-004** | **0.1485** | **0.0392** | **6.0000e-004** | **0.0398** | | **106.6220** | **106.6220** | **1.9500e-003** | | **106.6709** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.1298 | 0.0000 | 8.1298 | 4.4688 | 0.0000 | 4.4688 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.4399 | 13.6680 | 16.2918 | 0.0466 | | 0.4367 | 0.4367 | | 0.4367 | 0.4367 | 0.0000 | 4,409.7537 | 4,409.7537 | 0.2176 | | 4,415.1936 |
| **Total** | **2.4399** | **13.6680** | **16.2918** | **0.0466** | **8.1298** | **0.4367** | **8.5665** | **4.4688** | **0.4367** | **4.9055** | **0.0000** | **4,409.7537** | **4,409.7537** | **0.2176** | | **4,415.1936** |

## 3.2 Site Preparation - 2030

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0445 | 0.0211 | 0.3057 | 1.0700e-003 | 0.1479 | 6.5000e-004 | 0.1485 | 0.0392 | 6.0000e-004 | 0.0398 | | 106.6220 | 106.6220 | 1.9500e-003 | | 106.6709 |
| **Total** | **0.0445** | **0.0211** | **0.3057** | **1.0700e-003** | **0.1479** | **6.5000e-004** | **0.1485** | **0.0392** | **6.0000e-004** | **0.0398** | | **106.6220** | **106.6220** | **1.9500e-003** | | **106.6709** |

## 3.3 Grading - 2030

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.2807 | 13.8462 | 23.0239 | 0.0699 | | 0.4879 | 0.4879 | | 0.4879 | 0.4879 | | 7,213.1086 | 7,213.1086 | 0.2915 | | 7,220.3963 |
| **Total** | **3.2807** | **13.8462** | **23.0239** | **0.0699** | **8.6733** | **0.4879** | **9.1613** | **3.5965** | **0.4879** | **4.0844** | | **7,213.1086** | **7,213.1086** | **0.2915** | | **7,220.3963** |

## 3.3 Grading - 2030

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0494 | 0.0235 | 0.3397 | 1.1900e-003 | 0.1643 | 7.3000e-004 | 0.1650 | 0.0436 | 6.7000e-004 | 0.0443 | | 118.4689 | 118.4689 | 2.1700e-003 | | 118.5232 |
| **Total** | **0.0494** | **0.0235** | **0.3397** | **1.1900e-003** | **0.1643** | **7.3000e-004** | **0.1650** | **0.0436** | **6.7000e-004** | **0.0443** | | **118.4689** | **118.4689** | **2.1700e-003** | | **118.5232** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 3.9030 | 0.0000 | 3.9030 | 1.6184 | 0.0000 | 1.6184 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.2807 | 13.8462 | 23.0239 | 0.0699 | | 0.4879 | 0.4879 | | 0.4879 | 0.4879 | 0.0000 | 7,213.1086 | 7,213.1086 | 0.2915 | | 7,220.3963 |
| **Total** | **3.2807** | **13.8462** | **23.0239** | **0.0699** | **3.9030** | **0.4879** | **4.3909** | **1.6184** | **0.4879** | **2.1064** | **0.0000** | **7,213.1086** | **7,213.1086** | **0.2915** | | **7,220.3963** |

## 3.3 Grading - 2030

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0494 | 0.0235 | 0.3397 | 1.1900e-003 | 0.1643 | 7.3000e-004 | 0.1650 | 0.0436 | 6.7000e-004 | 0.0443 | | 118.4689 | 118.4689 | 2.1700e-003 | | 118.5232 |
| **Total** | **0.0494** | **0.0235** | **0.3397** | **1.1900e-003** | **0.1643** | **7.3000e-004** | **0.1650** | **0.0436** | **6.7000e-004** | **0.0443** | | **118.4689** | **118.4689** | **2.1700e-003** | | **118.5232** |

## 3.4 Building Construction - 2030

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

## 3.4 Building Construction - 2030

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0247 | 0.9491 | 0.1548 | 3.4900e-003 | 0.0882 | 9.6000e-004 | 0.0891 | 0.0254 | 9.2000e-004 | 0.0263 | | 364.4646 | 364.4646 | 0.0281 | | 365.1681 |
| Worker | 0.1111 | 0.0529 | 0.7643 | 2.6700e-003 | 0.3697 | 1.6300e-003 | 0.3713 | 0.0981 | 1.5000e-003 | 0.0996 | | 266.5551 | 266.5551 | 4.8800e-003 | | 266.6772 |
| **Total** | **0.1359** | **1.0019** | **0.9191** | **6.1600e-003** | **0.4578** | **2.5900e-003** | **0.4604** | **0.1234** | **2.4200e-003** | **0.1259** | | **631.0197** | **631.0197** | **0.0330** | | **631.8453** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

## 3.4 Building Construction - 2030

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0247 | 0.9491 | 0.1548 | 3.4900e-003 | 0.0882 | 9.6000e-004 | 0.0891 | 0.0254 | 9.2000e-004 | 0.0263 | | 364.4646 | 364.4646 | 0.0281 | | 365.1681 |
| Worker | 0.1111 | 0.0529 | 0.7643 | 2.6700e-003 | 0.3697 | 1.6300e-003 | 0.3713 | 0.0981 | 1.5000e-003 | 0.0996 | | 266.5551 | 266.5551 | 4.8800e-003 | | 266.6772 |
| **Total** | **0.1359** | **1.0019** | **0.9191** | **6.1600e-003** | **0.4578** | **2.5900e-003** | **0.4604** | **0.1234** | **2.4200e-003** | **0.1259** | | **631.0197** | **631.0197** | **0.0330** | | **631.8453** |

## 3.4 Building Construction - 2031

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

## 3.4 Building Construction - 2031

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0245 | 0.9432 | 0.1518 | 3.4800e-003 | 0.0882 | 9.5000e-004 | 0.0891 | 0.0254 | 9.1000e-004 | 0.0263 | | 363.5984 | 363.5984 | 0.0283 | | 364.3067 |
| Worker | 0.1019 | 0.0478 | 0.7121 | 2.6100e-003 | 0.3697 | 1.5200e-003 | 0.3712 | 0.0981 | 1.4000e-003 | 0.0995 | | 260.4497 | 260.4497 | 4.3900e-003 | | 260.5596 |
| **Total** | **0.1263** | **0.9910** | **0.8639** | **6.0900e-003** | **0.4578** | **2.4700e-003** | **0.4603** | **0.1234** | **2.3100e-003** | **0.1258** | | **624.0482** | **624.0482** | **0.0327** | | **624.8663** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

## 3.4 Building Construction - 2031

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0245 | 0.9432 | 0.1518 | 3.4800e-003 | 0.0882 | 9.5000e-004 | 0.0891 | 0.0254 | 9.1000e-004 | 0.0263 | | 363.5984 | 363.5984 | 0.0283 | | 364.3067 |
| Worker | 0.1019 | 0.0478 | 0.7121 | 2.6100e-003 | 0.3697 | 1.5200e-003 | 0.3712 | 0.0981 | 1.4000e-003 | 0.0995 | | 260.4497 | 260.4497 | 4.3900e-003 | | 260.5596 |
| **Total** | **0.1263** | **0.9910** | **0.8639** | **6.0900e-003** | **0.4578** | **2.4700e-003** | **0.4603** | **0.1234** | **2.3100e-003** | **0.1258** | | **624.0482** | **624.0482** | **0.0327** | | **624.8663** |

## 3.4 Building Construction - 2032

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

## 3.4 Building Construction - 2032

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0243 | 0.9379 | 0.1499 | 3.4700e-003 | 0.0882 | 9.4000e-004 | 0.0891 | 0.0254 | 9.0000e-004 | 0.0263 | | 363.1015 | 363.1015 | 0.0285 | | 363.8133 |
| Worker | 0.0934 | 0.0433 | 0.6658 | 2.5600e-003 | 0.3697 | 1.4200e-003 | 0.3711 | 0.0981 | 1.3000e-003 | 0.0994 | | 255.0904 | 255.0904 | 3.9700e-003 | | 255.1895 |
| **Total** | **0.1177** | **0.9813** | **0.8157** | **6.0300e-003** | **0.4578** | **2.3600e-003** | **0.4602** | **0.1234** | **2.2000e-003** | **0.1257** | | **618.1919** | **618.1919** | **0.0324** | | **619.0028** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

## 3.4 Building Construction - 2032

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0243 | 0.9379 | 0.1499 | 3.4700e-003 | 0.0882 | 9.4000e-004 | 0.0891 | 0.0254 | 9.0000e-004 | 0.0263 | | 363.1015 | 363.1015 | 0.0285 | | 363.8133 |
| Worker | 0.0934 | 0.0433 | 0.6658 | 2.5600e-003 | 0.3697 | 1.4200e-003 | 0.3711 | 0.0981 | 1.3000e-003 | 0.0994 | | 255.0904 | 255.0904 | 3.9700e-003 | | 255.1895 |
| **Total** | **0.1177** | **0.9813** | **0.8157** | **6.0300e-003** | **0.4578** | **2.3600e-003** | **0.4602** | **0.1234** | **2.2000e-003** | **0.1257** | | **618.1919** | **618.1919** | **0.0324** | | **619.0028** |

## 3.5 Paving - 2032

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3845 | 7.1202 | 15.8495 | 0.0281 | | 0.3306 | 0.3306 | | 0.3306 | 0.3306 | | 2,656.5168 | 2,656.5168 | 0.1245 | | 2,659.6302 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.3845** | **7.1202** | **15.8495** | **0.0281** | | **0.3306** | **0.3306** | | **0.3306** | **0.3306** | | **2,656.5168** | **2,656.5168** | **0.1245** | | **2,659.6302** |

## 3.5 Paving - 2032

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0311 | 0.0145 | 0.2219 | 8.5000e-004 | 0.1232 | 4.7000e-004 | 0.1237 | 0.0327 | 4.3000e-004 | 0.0331 | | 85.0301 | 85.0301 | 1.3200e-003 | | 85.0632 |
| **Total** | **0.0311** | **0.0145** | **0.2219** | **8.5000e-004** | **0.1232** | **4.7000e-004** | **0.1237** | **0.0327** | **4.3000e-004** | **0.0331** | | **85.0301** | **85.0301** | **1.3200e-003** | | **85.0632** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3845 | 7.1202 | 15.8495 | 0.0281 | | 0.3306 | 0.3306 | | 0.3306 | 0.3306 | 0.0000 | 2,656.5168 | 2,656.5168 | 0.1245 | | 2,659.6302 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.3845** | **7.1202** | **15.8495** | **0.0281** | | **0.3306** | **0.3306** | | **0.3306** | **0.3306** | **0.0000** | **2,656.5168** | **2,656.5168** | **0.1245** | | **2,659.6302** |

## 3.5 Paving - 2032

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0311 | 0.0145 | 0.2219 | 8.5000e-004 | 0.1232 | 4.7000e-004 | 0.1237 | 0.0327 | 4.3000e-004 | 0.0331 | | 85.0301 | 85.0301 | 1.3200e-003 | | 85.0632 |
| **Total** | **0.0311** | **0.0145** | **0.2219** | **8.5000e-004** | **0.1232** | **4.7000e-004** | **0.1237** | **0.0327** | **4.3000e-004** | **0.0331** | | **85.0301** | **85.0301** | **1.3200e-003** | | **85.0632** |

## 3.6 Architectural Coating - 2032

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 52.2927 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **52.4235** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

## 3.6 Architectural Coating - 2032

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0187 | 8.6700e-003 | 0.1332 | 5.1000e-004 | 0.0739 | 2.8000e-004 | 0.0742 | 0.0196 | 2.6000e-004 | 0.0199 | | 51.0181 | 51.0181 | 7.9000e-004 | | 51.0379 |
| **Total** | **0.0187** | **8.6700e-003** | **0.1332** | **5.1000e-004** | **0.0739** | **2.8000e-004** | **0.0742** | **0.0196** | **2.6000e-004** | **0.0199** | | **51.0181** | **51.0181** | **7.9000e-004** | | **51.0379** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 52.2927 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | 0.0000 | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **52.4235** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | **0.0000** | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

## 3.6 Architectural Coating - 2032

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0187 | 8.6700e-003 | 0.1332 | 5.1000e-004 | 0.0739 | 2.8000e-004 | 0.0742 | 0.0196 | 2.6000e-004 | 0.0199 | | 51.0181 | 51.0181 | 7.9000e-004 | | 51.0379 |
| **Total** | **0.0187** | **8.6700e-003** | **0.1332** | **5.1000e-004** | **0.0739** | **2.8000e-004** | **0.0742** | **0.0196** | **2.6000e-004** | **0.0199** | | **51.0181** | **51.0181** | **7.9000e-004** | | **51.0379** |

# 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 1.5461 | 4.1186 | 15.7476 | 0.0581 | 6.7233 | 0.0384 | 6.7617 | 1.7953 | 0.0357 | 1.8309 | | 5,892.400 3 | 5,892.400 3 | 0.2570 | | 5,898.824 4 |
| Unmitigated | 1.5724 | 4.2582 | 16.7309 | 0.0621 | 7.2215 | 0.0409 | 7.2624 | 1.9283 | 0.0380 | 1.9663 | | 6,299.269 8 | 6,299.269 8 | 0.2687 | | 6,305.987 7 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Single Family Housing | 1,180.00 | 1,192.50 | 1068.75 | 3,337,076 | 3,106,817 |
| Total | 1,180.00 | 1,192.50 | 1,068.75 | 3,337,076 | 3,106,817 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Single Family Housing | 10.80 | 7.30 | 7.50 | 42.30 | 19.60 | 38.10 | 86 | 11 | 3 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Single Family Housing | 0.511000 | 0.223100 | 0.169000 | 0.059300 | 0.000800 | 0.001000 | 0.007400 | 0.017300 | 0.000000 | 0.004400 | 0.002500 | 0.001200 | 0.003000 |

# 5.0 Energy Detail

Historical Energy Use: N

## 5.1 Mitigation Measures Energy

Exceed Title 24

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.0908 | 0.7756 | 0.3301 | 4.9500e-003 | | 0.0627 | 0.0627 | | 0.0627 | 0.0627 | | 990.1565 | 990.1565 | 0.0190 | 0.0182 | 996.0405 |
| NaturalGas Unmitigated | 0.0966 | 0.8252 | 0.3511 | 5.2700e-003 | | 0.0667 | 0.0667 | | 0.0667 | 0.0667 | | 1,053.3940 | 1,053.3940 | 0.0202 | 0.0193 | 1,059.6538 |

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| Single Family Housing | 8953.85 | 0.0966 | 0.8252 | 0.3511 | 5.2700e-003 | | 0.0667 | 0.0667 | | 0.0667 | 0.0667 | | 1,053.3940 | 1,053.3940 | 0.0202 | 0.0193 | 1,059.6538 |
| **Total** | | **0.0966** | **0.8252** | **0.3511** | **5.2700e-003** | | **0.0667** | **0.0667** | | **0.0667** | **0.0667** | | **1,053.3940** | **1,053.3940** | **0.0202** | **0.0193** | **1,059.6538** |

## 5.2 Energy by Land Use - NaturalGas

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| Single Family Housing | 8.41633 | 0.0908 | 0.7756 | 0.3301 | 4.9500e-003 | | 0.0627 | 0.0627 | | 0.0627 | 0.0627 | | 990.1565 | 990.1565 | 0.0190 | 0.0182 | 996.0405 |
| **Total** | | **0.0908** | **0.7756** | **0.3301** | **4.9500e-003** | | **0.0627** | **0.0627** | | **0.0627** | **0.0627** | | **990.1565** | **990.1565** | **0.0190** | **0.0182** | **996.0405** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 5.7575 | 1.2590 | 10.7707 | 7.8200e-003 | | 0.1494 | 0.1494 | | 0.1494 | 0.1494 | 0.0000 | 1,474.4514 | 1,474.4514 | 0.0456 | 0.0267 | 1,483.5453 |
| Unmitigated | 21.2013 | 3.5470 | 151.0229 | 0.4654 | | 23.0290 | 23.0290 | | 23.0290 | 23.0290 | 3,377.0356 | 1,474.4514 | 4,851.4870 | 15.8326 | 0.0267 | 5,255.2547 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.5014 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 4.8150 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 15.5772 | 3.4284 | 140.7375 | 0.4649 | | 22.9719 | 22.9719 | | 22.9719 | 22.9719 | 3,377.0356 | 1,455.8824 | 4,832.9179 | 15.8149 | 0.0267 | 5,236.2434 |
| Landscaping | 0.3076 | 0.1186 | 10.2854 | 5.4000e-004 | | 0.0572 | 0.0572 | | 0.0572 | 0.0572 | | 18.5690 | 18.5690 | 0.0177 | | 19.0113 |
| **Total** | **21.2013** | **3.5470** | **151.0229** | **0.4654** | | **23.0290** | **23.0290** | | **23.0290** | **23.0290** | **3,377.0356** | **1,474.4514** | **4,851.4870** | **15.8326** | **0.0267** | **5,255.2547** |

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.5014 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 4.8150 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.1335 | 1.1404 | 0.4853 | 7.2800e-003 | | 0.0922 | 0.0922 | | 0.0922 | 0.0922 | 0.0000 | 1,455.8824 | 1,455.8824 | 0.0279 | 0.0267 | 1,464.5339 |
| Landscaping | 0.3076 | 0.1186 | 10.2854 | 5.4000e-004 | | 0.0572 | 0.0572 | | 0.0572 | 0.0572 | | 18.5690 | 18.5690 | 0.0177 | | 19.0113 |
| **Total** | **5.7575** | **1.2590** | **10.7707** | **7.8200e-003** | | **0.1494** | **0.1494** | | **0.1494** | **0.1494** | **0.0000** | **1,474.4514** | **1,474.4514** | **0.0456** | **0.0267** | **1,483.5453** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

# 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

# 10.0 Stationary Equipment

## Fire Pumps and Emergency Generators

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## Boilers

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

## User Defined Equipment

| Equipment Type | Number |
|---|---|

# 11.0 Vegetation

# CalEEMod Output

# Phase 3 Construction and Operations

# (Winter Daily)

# Lacey Ranch Master Plan Phase 3 Const and Ops

**Kings County, Winter**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Single Family Housing | 125.00 | Dwelling Unit | 31.07 | 225,000.00 | 358 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 37 |
| **Climate Zone** | 3 | | | **Operational Year** | 2030 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 290 | **CH4 Intensity (lb/MWhr)** | 0.022 | **N2O Intensity (lb/MWhr)** | 0.005 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E Intensity Factors

Land Use - Project acres

Construction Phase -

Architectural Coating - Rule 4601 Architectural Coatings compliance

Vehicle Trips - ITE 10th Ed Trip Gen SFR 9.44, 9.54, 8.55

Woodstoves - Rule 4901 Residential Woodburning hearths allowed 2 per acre

Area Coating - Rule 4601 Architectural Coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Architectural Coatings

Energy Mitigation - 2019 Title 24

Water Mitigation - CalGreen indoor water savings and MWELO outdoor savings

Waste Mitigation - Calrecycle 75% diversion mandate

Fleet Mix - SJVAPCD Residential Fleet Mix for 2030

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblArchitecturalCoating | EF_Residential_Exterior | 150.00 | 65.00 |
| tblArchitecturalCoating | EF_Residential_Interior | 150.00 | 65.00 |
| tblAreaCoating | Area_EF_Residential_Exterior | 150 | 65 |
| tblAreaCoating | Area_EF_Residential_Interior | 150 | 65 |
| tblFleetMix | HHD | 0.17 | 0.02 |
| tblFleetMix | LDA | 0.53 | 0.51 |
| tblFleetMix | LDT1 | 0.03 | 0.22 |
| tblFleetMix | LDT2 | 0.16 | 0.17 |
| tblFleetMix | LHD1 | 0.01 | 8.0000e-004 |
| tblFleetMix | LHD2 | 3.5380e-003 | 1.0000e-003 |
| tblFleetMix | MCY | 5.0810e-003 | 2.5000e-003 |
| tblFleetMix | MDV | 0.09 | 0.06 |
| tblFleetMix | MH | 4.8100e-004 | 3.0000e-003 |
| tblFleetMix | MHD | 0.01 | 7.4000e-003 |
| tblFleetMix | OBUS | 1.6250e-003 | 0.00 |
| tblFleetMix | SBUS | 8.2500e-004 | 1.2000e-003 |
| tblFleetMix | UBUS | 1.3720e-003 | 4.4000e-003 |
| tblLandUse | LotAcreage | 40.58 | 31.07 |
| tblProjectCharacteristics | CH4IntensityFactor | 0.029 | 0.022 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 290 |
| tblProjectCharacteristics | N2OIntensityFactor | 0.006 | 0.005 |
| tblVehicleTrips | ST_TR | 9.91 | 9.54 |
| tblVehicleTrips | SU_TR | 8.62 | 8.55 |
| tblVehicleTrips | WD_TR | 9.52 | 9.44 |

## 2.0 Emissions Summary

## 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2030 | 3.3285 | 13.8738 | 23.3018 | 0.0710 | 18.2141 | 0.4887 | 18.6514 | 9.9699 | 0.4886 | 10.4072 | 0.0000 | 7,316.9185 | 7,316.9185 | 0.2934 | 0.0000 | 7,324.2527 |
| 2031 | 1.4337 | 8.9365 | 16.9171 | 0.0366 | 0.4578 | 0.1506 | 0.6085 | 0.1234 | 0.1505 | 0.2739 | 0.0000 | 3,478.0978 | 3,478.0978 | 0.1523 | 0.0000 | 3,481.9052 |
| 2032 | 52.4416 | 8.9256 | 16.8750 | 0.0366 | 0.4578 | 0.3311 | 0.6083 | 0.1234 | 0.3311 | 0.3638 | 0.0000 | 3,472.8723 | 3,472.8723 | 0.1521 | 0.0000 | 3,476.6745 |
| **Maximum** | **52.4416** | **13.8738** | **23.3018** | **0.0710** | **18.2141** | **0.4887** | **18.6514** | **9.9699** | **0.4886** | **10.4072** | **0.0000** | **7,316.9185** | **7,316.9185** | **0.2934** | **0.0000** | **7,324.2527** |

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2030 | 3.3285 | 13.8738 | 23.3018 | 0.0710 | 8.2777 | 0.4887 | 8.7150 | 4.5080 | 0.4886 | 4.9453 | 0.0000 | 7,316.9185 | 7,316.9185 | 0.2934 | 0.0000 | 7,324.2527 |
| 2031 | 1.4337 | 8.9365 | 16.9171 | 0.0366 | 0.4578 | 0.1506 | 0.6085 | 0.1234 | 0.1505 | 0.2739 | 0.0000 | 3,478.0978 | 3,478.0978 | 0.1523 | 0.0000 | 3,481.9052 |
| 2032 | 52.4416 | 8.9256 | 16.8750 | 0.0366 | 0.4578 | 0.3311 | 0.6083 | 0.1234 | 0.3311 | 0.3638 | 0.0000 | 3,472.8723 | 3,472.8723 | 0.1521 | 0.0000 | 3,476.6745 |
| **Maximum** | **52.4416** | **13.8738** | **23.3018** | **0.0710** | **8.2777** | **0.4887** | **8.7150** | **4.5080** | **0.4886** | **4.9453** | **0.0000** | **7,316.9185** | **7,316.9185** | **0.2934** | **0.0000** | **7,324.2527** |

Lacey Ranch Master Plan Phase 3 Const and Ops - Kings County, Winter

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | 0.00 | 0.00 | 0.00 | 0.00 | 51.94 | 0.00 | 50.01 | 53.46 | 0.00 | 49.45 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 21.2013 | 3.5470 | 151.0229 | 0.4654 | | 23.0290 | 23.0290 | | 23.0290 | 23.0290 | 3,377.035 6 | 1,474.451 4 | 4,851.487 0 | 15.8326 | 0.0267 | 5,255.254 7 |
| Energy | 0.0966 | 0.8252 | 0.3511 | 5.2700e-003 | | 0.0667 | 0.0667 | | 0.0667 | 0.0667 | | 1,053.394 0 | 1,053.394 0 | 0.0202 | 0.0193 | 1,059.653 8 |
| Mobile | 1.0959 | 4.4883 | 14.6897 | 0.0556 | 7.2215 | 0.0409 | 7.2625 | 1.9283 | 0.0380 | 1.9663 | | 5,647.117 9 | 5,647.117 9 | 0.2710 | | 5,653.892 2 |
| **Total** | **22.3938** | **8.8604** | **166.0638** | **0.5263** | **7.2215** | **23.1367** | **30.3582** | **1.9283** | **23.1337** | **25.0621** | **3,377.035 6** | **8,174.963 3** | **11,551.99 89** | **16.1237** | **0.0460** | **11,968.80 07** |

### Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 5.7575 | 1.2590 | 10.7707 | 7.8200e-003 | | 0.1494 | 0.1494 | | 0.1494 | 0.1494 | 0.0000 | 1,474.451 4 | 1,474.451 4 | 0.0456 | 0.0267 | 1,483.545 3 |
| Energy | 0.0908 | 0.7756 | 0.3301 | 4.9500e-003 | | 0.0627 | 0.0627 | | 0.0627 | 0.0627 | | 990.1565 | 990.1565 | 0.0190 | 0.0182 | 996.0405 |
| Mobile | 1.0719 | 4.3313 | 13.9289 | 0.0520 | 6.7233 | 0.0385 | 6.7617 | 1.7953 | 0.0357 | 1.8310 | | 5,282.784 7 | 5,282.784 7 | 0.2602 | | 5,289.290 3 |
| **Total** | **6.9202** | **6.3659** | **25.0296** | **0.0648** | **6.7233** | **0.2506** | **6.9738** | **1.7953** | **0.2478** | **2.0431** | **0.0000** | **7,747.392 5** | **7,747.392 5** | **0.3248** | **0.0448** | **7,768.876 0** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | 69.10 | 28.15 | 84.93 | 87.69 | 6.90 | 98.92 | 77.03 | 6.90 | 98.93 | 91.85 | 100.00 | 5.23 | 32.93 | 97.99 | 2.52 | 35.09 |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 1/1/2030 | 1/28/2030 | 5 | 20 | |
| 2 | Grading | Grading | 1/29/2030 | 4/1/2030 | 5 | 45 | |
| 3 | Building Construction | Building Construction | 4/2/2030 | 3/1/2032 | 5 | 500 | |
| 4 | Paving | Paving | 3/2/2032 | 4/19/2032 | 5 | 35 | |
| 5 | Architectural Coating | Architectural Coating | 4/20/2032 | 6/7/2032 | 5 | 35 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 112.5**

**Acres of Paving: 0**

**Residential Indoor: 455,625; Residential Outdoor: 151,875; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

### OffRoad Equipment

Lacey Ranch Master Plan Phase 3 Const and Ops - Kings County, Winter

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

## Trips and VMT

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 45.00 | 13.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 9.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

## 3.2 Site Preparation - 2030

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.4399 | 13.6680 | 16.2918 | 0.0466 | | 0.4367 | 0.4367 | | 0.4367 | 0.4367 | | 4,409.7537 | 4,409.7537 | 0.2176 | | 4,415.1936 |
| **Total** | **2.4399** | **13.6680** | **16.2918** | **0.0466** | **18.0663** | **0.4367** | **18.5029** | **9.9307** | **0.4367** | **10.3673** | | **4,409.7537** | **4,409.7537** | **0.2176** | | **4,415.1936** |

## 3.2 Site Preparation - 2030

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0430 | 0.0249 | 0.2502 | 9.4000e-004 | 0.1479 | 6.5000e-004 | 0.1485 | 0.0392 | 6.0000e-004 | 0.0398 | | 93.4289 | 93.4289 | 1.6700e-003 | | 93.4707 |
| **Total** | **0.0430** | **0.0249** | **0.2502** | **9.4000e-004** | **0.1479** | **6.5000e-004** | **0.1485** | **0.0392** | **6.0000e-004** | **0.0398** | | **93.4289** | **93.4289** | **1.6700e-003** | | **93.4707** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.1298 | 0.0000 | 8.1298 | 4.4688 | 0.0000 | 4.4688 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.4399 | 13.6680 | 16.2918 | 0.0466 | | 0.4367 | 0.4367 | | 0.4367 | 0.4367 | 0.0000 | 4,409.7537 | 4,409.7537 | 0.2176 | | 4,415.1936 |
| **Total** | **2.4399** | **13.6680** | **16.2918** | **0.0466** | **8.1298** | **0.4367** | **8.5665** | **4.4688** | **0.4367** | **4.9055** | **0.0000** | **4,409.7537** | **4,409.7537** | **0.2176** | | **4,415.1936** |

## 3.2 Site Preparation - 2030

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0430 | 0.0249 | 0.2502 | 9.4000e-004 | 0.1479 | 6.5000e-004 | 0.1485 | 0.0392 | 6.0000e-004 | 0.0398 | | 93.4289 | 93.4289 | 1.6700e-003 | | 93.4707 |
| **Total** | **0.0430** | **0.0249** | **0.2502** | **9.4000e-004** | **0.1479** | **6.5000e-004** | **0.1485** | **0.0392** | **6.0000e-004** | **0.0398** | | **93.4289** | **93.4289** | **1.6700e-003** | | **93.4707** |

## 3.3 Grading - 2030

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.2807 | 13.8462 | 23.0239 | 0.0699 | | 0.4879 | 0.4879 | | 0.4879 | 0.4879 | | 7,213.1086 | 7,213.1086 | 0.2915 | | 7,220.3963 |
| **Total** | **3.2807** | **13.8462** | **23.0239** | **0.0699** | **8.6733** | **0.4879** | **9.1613** | **3.5965** | **0.4879** | **4.0844** | | **7,213.1086** | **7,213.1086** | **0.2915** | | **7,220.3963** |

## 3.3 Grading - 2030

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0478 | 0.0276 | 0.2780 | 1.0400e-003 | 0.1643 | 7.3000e-004 | 0.1650 | 0.0436 | 6.7000e-004 | 0.0443 | | 103.8099 | 103.8099 | 1.8600e-003 | | 103.8564 |
| **Total** | **0.0478** | **0.0276** | **0.2780** | **1.0400e-003** | **0.1643** | **7.3000e-004** | **0.1650** | **0.0436** | **6.7000e-004** | **0.0443** | | **103.8099** | **103.8099** | **1.8600e-003** | | **103.8564** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 3.9030 | 0.0000 | 3.9030 | 1.6184 | 0.0000 | 1.6184 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.2807 | 13.8462 | 23.0239 | 0.0699 | | 0.4879 | 0.4879 | | 0.4879 | 0.4879 | 0.0000 | 7,213.1086 | 7,213.1086 | 0.2915 | | 7,220.3963 |
| **Total** | **3.2807** | **13.8462** | **23.0239** | **0.0699** | **3.9030** | **0.4879** | **4.3909** | **1.6184** | **0.4879** | **2.1064** | **0.0000** | **7,213.1086** | **7,213.1086** | **0.2915** | | **7,220.3963** |

## 3.3 Grading - 2030

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0478 | 0.0276 | 0.2780 | 1.0400e-003 | 0.1643 | 7.3000e-004 | 0.1650 | 0.0436 | 6.7000e-004 | 0.0443 | | 103.8099 | 103.8099 | 1.8600e-003 | | 103.8564 |
| **Total** | **0.0478** | **0.0276** | **0.2780** | **1.0400e-003** | **0.1643** | **7.3000e-004** | **0.1650** | **0.0436** | **6.7000e-004** | **0.0443** | | **103.8099** | **103.8099** | **1.8600e-003** | | **103.8564** |

## 3.4 Building Construction - 2030

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

## 3.4 Building Construction - 2030

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0262 | 0.9519 | 0.1832 | 3.3800e-003 | 0.0882 | 9.7000e-004 | 0.0891 | 0.0254 | 9.3000e-004 | 0.0263 | | 353.1911 | 353.1911 | 0.0321 | | 353.9930 |
| Worker | 0.1075 | 0.0621 | 0.6254 | 2.3400e-003 | 0.3697 | 1.6300e-003 | 0.3713 | 0.0981 | 1.5000e-003 | 0.0996 | | 233.5723 | 233.5723 | 4.1800e-003 | | 233.6768 |
| **Total** | **0.1337** | **1.0140** | **0.8086** | **5.7200e-003** | **0.4578** | **2.6000e-003** | **0.4604** | **0.1234** | **2.4300e-003** | **0.1259** | | **586.7634** | **586.7634** | **0.0363** | | **587.6699** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

## 3.4 Building Construction - 2030

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0262 | 0.9519 | 0.1832 | 3.3800e-003 | 0.0882 | 9.7000e-004 | 0.0891 | 0.0254 | 9.3000e-004 | 0.0263 | | 353.1911 | 353.1911 | 0.0321 | | 353.9930 |
| Worker | 0.1075 | 0.0621 | 0.6254 | 2.3400e-003 | 0.3697 | 1.6300e-003 | 0.3713 | 0.0981 | 1.5000e-003 | 0.0996 | | 233.5723 | 233.5723 | 4.1800e-003 | | 233.6768 |
| **Total** | **0.1337** | **1.0140** | **0.8086** | **5.7200e-003** | **0.4578** | **2.6000e-003** | **0.4604** | **0.1234** | **2.4300e-003** | **0.1259** | | **586.7634** | **586.7634** | **0.0363** | | **587.6699** |

## 3.4 Building Construction - 2031

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

## 3.4 Building Construction - 2031

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0259 | 0.9457 | 0.1799 | 3.3700e-003 | 0.0882 | 9.6000e-004 | 0.0891 | 0.0254 | 9.2000e-004 | 0.0263 | | 352.3654 | 352.3654 | 0.0323 | | 353.1729 |
| Worker | 0.0987 | 0.0561 | 0.5802 | 2.2900e-003 | 0.3697 | 1.5200e-003 | 0.3712 | 0.0981 | 1.4000e-003 | 0.0995 | | 228.1856 | 228.1856 | 3.7500e-003 | | 228.2794 |
| **Total** | **0.1246** | **1.0018** | **0.7601** | **5.6600e-003** | **0.4578** | **2.4800e-003** | **0.4603** | **0.1234** | **2.3200e-003** | **0.1258** | | **580.5510** | **580.5510** | **0.0361** | | **581.4524** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

## 3.4 Building Construction - 2031

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0259 | 0.9457 | 0.1799 | 3.3700e-003 | 0.0882 | 9.6000e-004 | 0.0891 | 0.0254 | 9.2000e-004 | 0.0263 | | 352.3654 | 352.3654 | 0.0323 | | 353.1729 |
| Worker | 0.0987 | 0.0561 | 0.5802 | 2.2900e-003 | 0.3697 | 1.5200e-003 | 0.3712 | 0.0981 | 1.4000e-003 | 0.0995 | | 228.1856 | 228.1856 | 3.7500e-003 | | 228.2794 |
| **Total** | **0.1246** | **1.0018** | **0.7601** | **5.6600e-003** | **0.4578** | **2.4800e-003** | **0.4603** | **0.1234** | **2.3200e-003** | **0.1258** | | **580.5510** | **580.5510** | **0.0361** | | **581.4524** |

## 3.4 Building Construction - 2032

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

## 3.4 Building Construction - 2032

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0257 | 0.9402 | 0.1779 | 3.3700e-003 | 0.0882 | 9.5000e-004 | 0.0891 | 0.0254 | 9.1000e-004 | 0.0263 | | 351.8704 | 351.8704 | 0.0325 | | 352.6821 |
| Worker | 0.0906 | 0.0508 | 0.5402 | 2.2400e-003 | 0.3697 | 1.4200e-003 | 0.3711 | 0.0981 | 1.3000e-003 | 0.0994 | | 223.4551 | 223.4551 | 3.3800e-003 | | 223.5395 |
| **Total** | **0.1163** | **0.9910** | **0.7181** | **5.6100e-003** | **0.4578** | **2.3700e-003** | **0.4602** | **0.1234** | **2.2100e-003** | **0.1257** | | **575.3255** | **575.3255** | **0.0359** | | **576.2216** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | 0.0000 | 2,897.546 8 | 2,897.546 8 | 0.1162 | | 2,900.452 9 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | **0.0000** | **2,897.546 8** | **2,897.546 8** | **0.1162** | | **2,900.452 9** |

## 3.4 Building Construction - 2032

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0257 | 0.9402 | 0.1779 | 3.3700e-003 | 0.0882 | 9.5000e-004 | 0.0891 | 0.0254 | 9.1000e-004 | 0.0263 | | 351.8704 | 351.8704 | 0.0325 | | 352.6821 |
| Worker | 0.0906 | 0.0508 | 0.5402 | 2.2400e-003 | 0.3697 | 1.4200e-003 | 0.3711 | 0.0981 | 1.3000e-003 | 0.0994 | | 223.4551 | 223.4551 | 3.3800e-003 | | 223.5395 |
| **Total** | **0.1163** | **0.9910** | **0.7181** | **5.6100e-003** | **0.4578** | **2.3700e-003** | **0.4602** | **0.1234** | **2.2100e-003** | **0.1257** | | **575.3255** | **575.3255** | **0.0359** | | **576.2216** |

## 3.5 Paving - 2032

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3845 | 7.1202 | 15.8495 | 0.0281 | | 0.3306 | 0.3306 | | 0.3306 | 0.3306 | | 2,656.5168 | 2,656.5168 | 0.1245 | | 2,659.6302 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.3845** | **7.1202** | **15.8495** | **0.0281** | | **0.3306** | **0.3306** | | **0.3306** | **0.3306** | | **2,656.5168** | **2,656.5168** | **0.1245** | | **2,659.6302** |

## 3.5 Paving - 2032

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0302 | 0.0169 | 0.1801 | 7.5000e-004 | 0.1232 | 4.7000e-004 | 0.1237 | 0.0327 | 4.3000e-004 | 0.0331 | | 74.4850 | 74.4850 | 1.1300e-003 | | 74.5132 |
| **Total** | **0.0302** | **0.0169** | **0.1801** | **7.5000e-004** | **0.1232** | **4.7000e-004** | **0.1237** | **0.0327** | **4.3000e-004** | **0.0331** | | **74.4850** | **74.4850** | **1.1300e-003** | | **74.5132** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3845 | 7.1202 | 15.8495 | 0.0281 | | 0.3306 | 0.3306 | | 0.3306 | 0.3306 | 0.0000 | 2,656.5168 | 2,656.5168 | 0.1245 | | 2,659.6302 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.3845** | **7.1202** | **15.8495** | **0.0281** | | **0.3306** | **0.3306** | | **0.3306** | **0.3306** | **0.0000** | **2,656.5168** | **2,656.5168** | **0.1245** | | **2,659.6302** |

### 3.5 Paving - 2032

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0302 | 0.0169 | 0.1801 | 7.5000e-004 | 0.1232 | 4.7000e-004 | 0.1237 | 0.0327 | 4.3000e-004 | 0.0331 | | 74.4850 | 74.4850 | 1.1300e-003 | | 74.5132 |
| **Total** | **0.0302** | **0.0169** | **0.1801** | **7.5000e-004** | **0.1232** | **4.7000e-004** | **0.1237** | **0.0327** | **4.3000e-004** | **0.0331** | | **74.4850** | **74.4850** | **1.1300e-003** | | **74.5132** |

### 3.6 Architectural Coating - 2032

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 52.2927 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **52.4235** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

## 3.6 Architectural Coating - 2032

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0181 | 0.0102 | 0.1080 | 4.5000e-004 | 0.0739 | 2.8000e-004 | 0.0742 | 0.0196 | 2.6000e-004 | 0.0199 | | 44.6910 | 44.6910 | 6.8000e-004 | | 44.7079 |
| **Total** | **0.0181** | **0.0102** | **0.1080** | **4.5000e-004** | **0.0739** | **2.8000e-004** | **0.0742** | **0.0196** | **2.6000e-004** | **0.0199** | | **44.6910** | **44.6910** | **6.8000e-004** | | **44.7079** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 52.2927 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1308 | 0.8563 | 1.7977 | 2.9700e-003 | | 0.0203 | 0.0203 | | 0.0203 | 0.0203 | 0.0000 | 281.4481 | 281.4481 | 0.0114 | | 281.7328 |
| **Total** | **52.4235** | **0.8563** | **1.7977** | **2.9700e-003** | | **0.0203** | **0.0203** | | **0.0203** | **0.0203** | **0.0000** | **281.4481** | **281.4481** | **0.0114** | | **281.7328** |

## 3.6 Architectural Coating - 2032

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0181 | 0.0102 | 0.1080 | 4.5000e-004 | 0.0739 | 2.8000e-004 | 0.0742 | 0.0196 | 2.6000e-004 | 0.0199 | | 44.6910 | 44.6910 | 6.8000e-004 | | 44.7079 |
| **Total** | **0.0181** | **0.0102** | **0.1080** | **4.5000e-004** | **0.0739** | **2.8000e-004** | **0.0742** | **0.0196** | **2.6000e-004** | **0.0199** | | **44.6910** | **44.6910** | **6.8000e-004** | | **44.7079** |

# 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

| Category | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 1.0719 | 4.3313 | 13.9289 | 0.0520 | 6.7233 | 0.0385 | 6.7617 | 1.7953 | 0.0357 | 1.8310 | | 5,282.7847 | 5,282.7847 | 0.2602 | | 5,289.2903 |
| Unmitigated | 1.0959 | 4.4883 | 14.6897 | 0.0556 | 7.2215 | 0.0409 | 7.2625 | 1.9283 | 0.0380 | 1.9663 | | 5,647.1179 | 5,647.1179 | 0.2710 | | 5,653.8922 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Single Family Housing | 1,180.00 | 1,192.50 | 1068.75 | 3,337,076 | 3,106,817 |
| Total | 1,180.00 | 1,192.50 | 1,068.75 | 3,337,076 | 3,106,817 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Single Family Housing | 10.80 | 7.30 | 7.50 | 42.30 | 19.60 | 38.10 | 86 | 11 | 3 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Single Family Housing | 0.511000 | 0.223100 | 0.169000 | 0.059300 | 0.000800 | 0.001000 | 0.007400 | 0.017300 | 0.000000 | 0.004400 | 0.002500 | 0.001200 | 0.003000 |

# 5.0 Energy Detail

Historical Energy Use: N

## 5.1 Mitigation Measures Energy

Exceed Title 24

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.0908 | 0.7756 | 0.3301 | 4.9500e-003 | | 0.0627 | 0.0627 | | 0.0627 | 0.0627 | | 990.1565 | 990.1565 | 0.0190 | 0.0182 | 996.0405 |
| NaturalGas Unmitigated | 0.0966 | 0.8252 | 0.3511 | 5.2700e-003 | | 0.0667 | 0.0667 | | 0.0667 | 0.0667 | | 1,053.3940 | 1,053.3940 | 0.0202 | 0.0193 | 1,059.6538 |

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| Single Family Housing | 8953.85 | 0.0966 | 0.8252 | 0.3511 | 5.2700e-003 | | 0.0667 | 0.0667 | | 0.0667 | 0.0667 | | 1,053.3940 | 1,053.3940 | 0.0202 | 0.0193 | 1,059.6538 |
| **Total** | | **0.0966** | **0.8252** | **0.3511** | **5.2700e-003** | | **0.0667** | **0.0667** | | **0.0667** | **0.0667** | | **1,053.3940** | **1,053.3940** | **0.0202** | **0.0193** | **1,059.6538** |

### 5.2 Energy by Land Use - NaturalGas

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| Single Family Housing | 8.41633 | 0.0908 | 0.7756 | 0.3301 | 4.9500e-003 | | 0.0627 | 0.0627 | | 0.0627 | 0.0627 | | 990.1565 | 990.1565 | 0.0190 | 0.0182 | 996.0405 |
| **Total** | | **0.0908** | **0.7756** | **0.3301** | **4.9500e-003** | | **0.0627** | **0.0627** | | **0.0627** | **0.0627** | | **990.1565** | **990.1565** | **0.0190** | **0.0182** | **996.0405** |

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

| Category | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 5.7575 | 1.2590 | 10.7707 | 7.8200e-003 | | 0.1494 | 0.1494 | | 0.1494 | 0.1494 | 0.0000 | 1,474.4514 | 1,474.4514 | 0.0456 | 0.0267 | 1,483.5453 |
| Unmitigated | 21.2013 | 3.5470 | 151.0229 | 0.4654 | | 23.0290 | 23.0290 | | 23.0290 | 23.0290 | 3,377.0356 | 1,474.4514 | 4,851.4870 | 15.8326 | 0.0267 | 5,255.2547 |

## 6.2 Area by SubCategory

**Unmitigated**

| SubCategory | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.5014 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 4.8150 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 15.5772 | 3.4284 | 140.7375 | 0.4649 | | 22.9719 | 22.9719 | | 22.9719 | 22.9719 | 3,377.0356 | 1,455.8824 | 4,832.9179 | 15.8149 | 0.0267 | 5,236.2434 |
| Landscaping | 0.3076 | 0.1186 | 10.2854 | 5.4000e-004 | | 0.0572 | 0.0572 | | 0.0572 | 0.0572 | | 18.5690 | 18.5690 | 0.0177 | | 19.0113 |
| **Total** | **21.2013** | **3.5470** | **151.0229** | **0.4654** | | **23.0290** | **23.0290** | | **23.0290** | **23.0290** | **3,377.0356** | **1,474.4514** | **4,851.4870** | **15.8326** | **0.0267** | **5,255.2547** |

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.5014 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 4.8150 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.1335 | 1.1404 | 0.4853 | 7.2800e-003 | | 0.0922 | 0.0922 | | 0.0922 | 0.0922 | 0.0000 | 1,455.8824 | 1,455.8824 | 0.0279 | 0.0267 | 1,464.5339 |
| Landscaping | 0.3076 | 0.1186 | 10.2854 | 5.4000e-004 | | 0.0572 | 0.0572 | | 0.0572 | 0.0572 | | 18.5690 | 18.5690 | 0.0177 | | 19.0113 |
| **Total** | **5.7575** | **1.2590** | **10.7707** | **7.8200e-003** | | **0.1494** | **0.1494** | | **0.1494** | **0.1494** | **0.0000** | **1,474.4514** | **1,474.4514** | **0.0456** | **0.0267** | **1,483.5453** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

# 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

### Fire Pumps and Emergency Generators

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

### Boilers

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

### User Defined Equipment

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

# CalEEMod Output

# Phase 4 Construction and Operations

# (Summer Daily)

# Lacey Ranch Master Plan Phase 4 Const and Ops
**Kings County, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Single Family Housing | 172.00 | Dwelling Unit | 42.75 | 309,600.00 | 492 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 37 |
| **Climate Zone** | 3 | | | **Operational Year** | 2034 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 290 | **CH4 Intensity (lb/MWhr)** | 0.022 | **N2O Intensity (lb/MWhr)** | 0.005 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E Intensity Factors

Land Use - Project acres

Construction Phase -

Architectural Coating - Rule 4601 Architectural Coatings compliance

Vehicle Trips - ITE 10th Ed Trip Gen SFR 9.44, 9.54, 8.55

Woodstoves - Rule 4901 Residential Woodburning hearths allowed 2 per acre

Area Coating - Rule 4601 Architectural Coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Architectural Coatings

Energy Mitigation - 2019 Title 24

Water Mitigation - CalGreen indoor water savings and MWELO outdoor savings

Waste Mitigation - Calrecycle 75% diversion mandate

Fleet Mix - SJVAPCD Residential Fleet Mix for 2034

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblArchitecturalCoating | EF_Residential_Exterior | 150.00 | 65.00 |
| tblArchitecturalCoating | EF_Residential_Interior | 150.00 | 65.00 |
| tblAreaMitigation | UseLowVOCPaintResidentialExteriorValue | 150 | 65 |
| tblAreaMitigation | UseLowVOCPaintResidentialInteriorValue | 150 | 65 |
| tblFleetMix | HHD | 0.16 | 0.02 |
| tblFleetMix | LDA | 0.53 | 0.50 |
| tblFleetMix | LDT1 | 0.03 | 0.23 |
| tblFleetMix | LDT2 | 0.16 | 0.17 |
| tblFleetMix | LHD1 | 9.1920e-003 | 8.0000e-004 |
| tblFleetMix | LHD2 | 3.4050e-003 | 1.0000e-003 |
| tblFleetMix | MCY | 4.9870e-003 | 2.7000e-003 |
| tblFleetMix | MDV | 0.09 | 0.06 |
| tblFleetMix | MH | 4.4200e-004 | 3.6000e-003 |
| tblFleetMix | MHD | 0.01 | 7.6000e-003 |
| tblFleetMix | OBUS | 1.6090e-003 | 0.00 |
| tblFleetMix | SBUS | 7.8600e-004 | 1.2000e-003 |
| tblFleetMix | UBUS | 1.2940e-003 | 4.4000e-003 |
| tblLandUse | LotAcreage | 55.84 | 42.75 |
| tblProjectCharacteristics | CH4IntensityFactor | 0.029 | 0.022 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 290 |
| tblProjectCharacteristics | N2OIntensityFactor | 0.006 | 0.005 |
| tblVehicleTrips | ST_TR | 9.91 | 9.54 |
| tblVehicleTrips | SU_TR | 8.62 | 8.55 |
| tblVehicleTrips | WD_TR | 9.52 | 9.44 |
| tblWoodstoves | NumberCatalytic | 42.75 | 31.07 |
| tblWoodstoves | NumberNoncatalytic | 42.75 | 31.07 |

# 2.0 Emissions Summary

## 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2034 | 3.3161 | 13.8623 | 23.2855 | 0.0710 | 18.2141 | 0.4885 | 18.6513 | 9.9699 | 0.4884 | 10.4070 | 0.0000 | 7,322.5964 | 7,322.5964 | 0.2930 | 0.0000 | 7,329.9204 |
| 2035 | 1.3525 | 8.4896 | 17.0896 | 0.0391 | 0.6314 | 0.0933 | 0.7247 | 0.1703 | 0.0931 | 0.2634 | 0.0000 | 3,734.2298 | 3,734.2298 | 0.1517 | 0.0000 | 3,738.0214 |
| 2036 | 1.3525 | 8.4896 | 17.0896 | 0.0391 | 0.6314 | 0.0933 | 0.7247 | 0.1703 | 0.0931 | 0.2634 | 0.0000 | 3,734.2298 | 3,734.2298 | 0.1517 | 0.0000 | 3,738.0214 |
| 2037 | 45.9271 | 8.4896 | 17.0896 | 0.0391 | 0.6314 | 0.1878 | 0.7247 | 0.1703 | 0.1878 | 0.2634 | 0.0000 | 3,734.2298 | 3,734.2298 | 0.1517 | 0.0000 | 3,738.0214 |
| **Maximum** | **45.9271** | **13.8623** | **23.2855** | **0.0710** | **18.2141** | **0.4885** | **18.6513** | **9.9699** | **0.4884** | **10.4070** | **0.0000** | **7,322.5964** | **7,322.5964** | **0.2930** | **0.0000** | **7,329.9204** |

## 2.1 Overall Construction (Maximum Daily Emission)

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2034 | 3.3161 | 13.8623 | 23.2855 | 0.0710 | 8.2777 | 0.4885 | 8.7148 | 4.5080 | 0.4884 | 4.9452 | 0.0000 | 7,322.5964 | 7,322.5964 | 0.2930 | 0.0000 | 7,329.9204 |
| 2035 | 1.3525 | 8.4896 | 17.0896 | 0.0391 | 0.6314 | 0.0933 | 0.7247 | 0.1703 | 0.0931 | 0.2634 | 0.0000 | 3,734.2298 | 3,734.2298 | 0.1517 | 0.0000 | 3,738.0214 |
| 2036 | 1.3525 | 8.4896 | 17.0896 | 0.0391 | 0.6314 | 0.0933 | 0.7247 | 0.1703 | 0.0931 | 0.2634 | 0.0000 | 3,734.2298 | 3,734.2298 | 0.1517 | 0.0000 | 3,738.0214 |
| 2037 | 45.9271 | 8.4896 | 17.0896 | 0.0391 | 0.6314 | 0.1878 | 0.7247 | 0.1703 | 0.1878 | 0.2634 | 0.0000 | 3,734.2298 | 3,734.2298 | 0.1517 | 0.0000 | 3,738.0214 |
| **Maximum** | **45.9271** | **13.8623** | **23.2855** | **0.0710** | **8.2777** | **0.4885** | **8.7148** | **4.5080** | **0.4884** | **4.9452** | **0.0000** | **7,322.5964** | **7,322.5964** | **0.2930** | **0.0000** | **7,329.9204** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **49.41** | **0.00** | **47.71** | **52.11** | **0.00** | **48.78** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 2.2 Overall Operational

**Unmitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 24.2684 | 4.0204 | 155.0727 | 0.4684 | | 23.0852 | 23.0852 | | 23.0852 | 23.0852 | 3,377.0356 | 2,028.8451 | 5,405.8807 | 15.8497 | 0.0367 | 5,813.0677 |
| Energy | 0.1329 | 1.1354 | 0.4832 | 7.2500e-003 | | 0.0918 | 0.0918 | | 0.0918 | 0.0918 | | 1,449.4702 | 1,449.4702 | 0.0278 | 0.0266 | 1,458.0837 |
| Mobile | 1.6605 | 5.3631 | 18.4006 | 0.0808 | 9.9409 | 0.0437 | 9.9847 | 2.6550 | 0.0406 | 2.6956 | | 8,206.4403 | 8,206.4403 | 0.3368 | | 8,214.8591 |
| **Total** | **26.0617** | **10.5189** | **173.9565** | **0.5564** | **9.9409** | **23.2208** | **33.1617** | **2.6550** | **23.2176** | **25.8726** | **3,377.0356** | **11,684.7556** | **15,061.7912** | **16.2142** | **0.0633** | **15,486.0105** |

**Mitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 7.9224 | 1.7324 | 14.8205 | 0.0108 | | 0.2056 | 0.2056 | | 0.2056 | 0.2056 | 0.0000 | 2,028.8451 | 2,028.8451 | 0.0627 | 0.0367 | 2,041.3583 |
| Energy | 0.1249 | 1.0673 | 0.4542 | 6.8100e-003 | | 0.0863 | 0.0863 | | 0.0863 | 0.0863 | | 1,362.4553 | 1,362.4553 | 0.0261 | 0.0250 | 1,370.5517 |
| Mobile | 1.6305 | 5.2058 | 17.3080 | 0.0756 | 9.2550 | 0.0411 | 9.2961 | 2.4718 | 0.0382 | 2.5100 | | 7,678.3585 | 7,678.3585 | 0.3230 | | 7,686.4341 |
| **Total** | **9.6777** | **8.0055** | **32.5826** | **0.0931** | **9.2550** | **0.3330** | **9.5880** | **2.4718** | **0.3301** | **2.8019** | **0.0000** | **11,069.6589** | **11,069.6589** | **0.4119** | **0.0617** | **11,098.3440** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | 62.87 | 23.89 | 81.27 | 83.26 | 6.90 | 98.57 | 71.09 | 6.90 | 98.58 | 89.17 | 100.00 | 5.26 | 26.51 | 97.46 | 2.51 | 28.33 |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 1/1/2034 | 2/10/2034 | 5 | 30 | |
| 2 | Grading | Grading | 2/11/2034 | 5/26/2034 | 5 | 75 | |
| 3 | Building Construction | Building Construction | 5/27/2034 | 3/27/2037 | 5 | 740 | |
| 4 | Paving | Paving | 3/28/2037 | 6/12/2037 | 5 | 55 | |
| 5 | Architectural Coating | Architectural Coating | 6/13/2037 | 8/28/2037 | 5 | 55 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 187.5**

**Acres of Paving: 0**

**Residential Indoor: 626,940; Residential Outdoor: 208,980; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

## **Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 62.00 | 18.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 12.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

## 3.2 Site Preparation - 2034

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.4399 | 13.6680 | 16.2918 | 0.0466 | | 0.4367 | 0.4367 | | 0.4367 | 0.4367 | | 4,409.753 7 | 4,409.753 7 | 0.2176 | | 4,415.193 6 |
| **Total** | **2.4399** | **13.6680** | **16.2918** | **0.0466** | **18.0663** | **0.4367** | **18.5029** | **9.9307** | **0.4367** | **10.3673** | | **4,409.753 7** | **4,409.753 7** | **0.2176** | | **4,415.193 6** |

## 3.2 Site Preparation - 2034

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0318 | 0.0146 | 0.2355 | 9.9000e-004 | 0.1479 | 4.9000e-004 | 0.1484 | 0.0392 | 4.5000e-004 | 0.0397 | | 98.5391 | 98.5391 | 1.3000e-003 | | 98.5717 |
| **Total** | **0.0318** | **0.0146** | **0.2355** | **9.9000e-004** | **0.1479** | **4.9000e-004** | **0.1484** | **0.0392** | **4.5000e-004** | **0.0397** | | **98.5391** | **98.5391** | **1.3000e-003** | | **98.5717** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.1298 | 0.0000 | 8.1298 | 4.4688 | 0.0000 | 4.4688 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.4399 | 13.6680 | 16.2918 | 0.0466 | | 0.4367 | 0.4367 | | 0.4367 | 0.4367 | 0.0000 | 4,409.7537 | 4,409.7537 | 0.2176 | | 4,415.1936 |
| **Total** | **2.4399** | **13.6680** | **16.2918** | **0.0466** | **8.1298** | **0.4367** | **8.5665** | **4.4688** | **0.4367** | **4.9055** | **0.0000** | **4,409.7537** | **4,409.7537** | **0.2176** | | **4,415.1936** |

## 3.2 Site Preparation - 2034

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0318 | 0.0146 | 0.2355 | 9.9000e-004 | 0.1479 | 4.9000e-004 | 0.1484 | 0.0392 | 4.5000e-004 | 0.0397 | | 98.5391 | 98.5391 | 1.3000e-003 | | 98.5717 |
| **Total** | **0.0318** | **0.0146** | **0.2355** | **9.9000e-004** | **0.1479** | **4.9000e-004** | **0.1484** | **0.0392** | **4.5000e-004** | **0.0397** | | **98.5391** | **98.5391** | **1.3000e-003** | | **98.5717** |

## 3.3 Grading - 2034

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.2807 | 13.8462 | 23.0239 | 0.0699 | | 0.4879 | 0.4879 | | 0.4879 | 0.4879 | | 7,213.1086 | 7,213.1086 | 0.2915 | | 7,220.3963 |
| **Total** | **3.2807** | **13.8462** | **23.0239** | **0.0699** | **8.6733** | **0.4879** | **9.1613** | **3.5965** | **0.4879** | **4.0844** | | **7,213.1086** | **7,213.1086** | **0.2915** | | **7,220.3963** |

## 3.3 Grading - 2034

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0354 | 0.0162 | 0.2616 | 1.1000e-003 | 0.1643 | 5.5000e-004 | 0.1648 | 0.0436 | 5.0000e-004 | 0.0441 | | 109.4879 | 109.4879 | 1.4500e-003 | | 109.5241 |
| **Total** | **0.0354** | **0.0162** | **0.2616** | **1.1000e-003** | **0.1643** | **5.5000e-004** | **0.1648** | **0.0436** | **5.0000e-004** | **0.0441** | | **109.4879** | **109.4879** | **1.4500e-003** | | **109.5241** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 3.9030 | 0.0000 | 3.9030 | 1.6184 | 0.0000 | 1.6184 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.2807 | 13.8462 | 23.0239 | 0.0699 | | 0.4879 | 0.4879 | | 0.4879 | 0.4879 | 0.0000 | 7,213.1086 | 7,213.1086 | 0.2915 | | 7,220.3963 |
| **Total** | **3.2807** | **13.8462** | **23.0239** | **0.0699** | **3.9030** | **0.4879** | **4.3909** | **1.6184** | **0.4879** | **2.1064** | **0.0000** | **7,213.1086** | **7,213.1086** | **0.2915** | | **7,220.3963** |

## 3.3 Grading - 2034

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0354 | 0.0162 | 0.2616 | 1.1000e-003 | 0.1643 | 5.5000e-004 | 0.1648 | 0.0436 | 5.0000e-004 | 0.0441 | | 109.4879 | 109.4879 | 1.4500e-003 | | 109.5241 |
| **Total** | **0.0354** | **0.0162** | **0.2616** | **1.1000e-003** | **0.1643** | **5.5000e-004** | **0.1648** | **0.0436** | **5.0000e-004** | **0.0441** | | **109.4879** | **109.4879** | **1.4500e-003** | | **109.5241** |

## 3.4 Building Construction - 2034

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.546 8 | 2,897.546 8 | 0.1162 | | 2,900.452 9 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.546 8** | **2,897.546 8** | **0.1162** | | **2,900.452 9** |

## 3.4 Building Construction - 2034

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0333 | 1.2863 | 0.2039 | 4.8000e-003 | 0.1221 | 1.2800e-003 | 0.1234 | 0.0352 | 1.2300e-003 | 0.0364 | | 502.1375 | 502.1375 | 0.0396 | | 503.1264 |
| Worker | 0.1097 | 0.0502 | 0.8110 | 3.4000e-003 | 0.5093 | 1.7000e-003 | 0.5110 | 0.1351 | 1.5700e-003 | 0.1367 | | 339.4125 | 339.4125 | 4.4900e-003 | | 339.5247 |
| **Total** | **0.1430** | **1.3365** | **1.0149** | **8.2000e-003** | **0.6314** | **2.9800e-003** | **0.6344** | **0.1703** | **2.8000e-003** | **0.1730** | | **841.5500** | **841.5500** | **0.0441** | | **842.6511** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

## 3.4 Building Construction - 2034

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0333 | 1.2863 | 0.2039 | 4.8000e-003 | 0.1221 | 1.2800e-003 | 0.1234 | 0.0352 | 1.2300e-003 | 0.0364 | | 502.1375 | 502.1375 | 0.0396 | | 503.1264 |
| Worker | 0.1097 | 0.0502 | 0.8110 | 3.4000e-003 | 0.5093 | 1.7000e-003 | 0.5110 | 0.1351 | 1.5700e-003 | 0.1367 | | 339.4125 | 339.4125 | 4.4900e-003 | | 339.5247 |
| **Total** | **0.1430** | **1.3365** | **1.0149** | **8.2000e-003** | **0.6314** | **2.9800e-003** | **0.6344** | **0.1703** | **2.8000e-003** | **0.1730** | | **841.5500** | **841.5500** | **0.0441** | | **842.6511** |

## 3.4 Building Construction - 2035

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.2168 | 7.1613 | 16.1178 | 0.0310 | | 0.0904 | 0.0904 | | 0.0904 | 0.0904 | | 2,897.5468 | 2,897.5468 | 0.1079 | | 2,900.2448 |
| **Total** | **1.2168** | **7.1613** | **16.1178** | **0.0310** | | **0.0904** | **0.0904** | | **0.0904** | **0.0904** | | **2,897.5468** | **2,897.5468** | **0.1079** | | **2,900.2448** |

## 3.4 Building Construction - 2035

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0332 | 1.2813 | 0.2025 | 4.8000e-003 | 0.1221 | 1.2700e-003 | 0.1234 | 0.0352 | 1.2200e-003 | 0.0364 | | 502.0555 | 502.0555 | 0.0396 | | 503.0462 |
| Worker | 0.1025 | 0.0470 | 0.7693 | 3.3500e-003 | 0.5093 | 1.5900e-003 | 0.5109 | 0.1351 | 1.4700e-003 | 0.1366 | | 334.6275 | 334.6275 | 4.1200e-003 | | 334.7304 |
| **Total** | **0.1357** | **1.3283** | **0.9718** | **8.1500e-003** | **0.6314** | **2.8600e-003** | **0.6343** | **0.1703** | **2.6900e-003** | **0.1729** | | **836.6830** | **836.6830** | **0.0438** | | **837.7766** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.2168 | 7.1613 | 16.1178 | 0.0310 | | 0.0904 | 0.0904 | | 0.0904 | 0.0904 | 0.0000 | 2,897.546 8 | 2,897.546 8 | 0.1079 | | 2,900.244 8 |
| **Total** | **1.2168** | **7.1613** | **16.1178** | **0.0310** | | **0.0904** | **0.0904** | | **0.0904** | **0.0904** | **0.0000** | **2,897.546 8** | **2,897.546 8** | **0.1079** | | **2,900.244 8** |

## 3.4 Building Construction - 2035

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0332 | 1.2813 | 0.2025 | 4.8000e-003 | 0.1221 | 1.2700e-003 | 0.1234 | 0.0352 | 1.2200e-003 | 0.0364 | | 502.0555 | 502.0555 | 0.0396 | | 503.0462 |
| Worker | 0.1025 | 0.0470 | 0.7693 | 3.3500e-003 | 0.5093 | 1.5900e-003 | 0.5109 | 0.1351 | 1.4700e-003 | 0.1366 | | 334.6275 | 334.6275 | 4.1200e-003 | | 334.7304 |
| **Total** | **0.1357** | **1.3283** | **0.9718** | **8.1500e-003** | **0.6314** | **2.8600e-003** | **0.6343** | **0.1703** | **2.6900e-003** | **0.1729** | | **836.6830** | **836.6830** | **0.0438** | | **837.7766** |

## 3.4 Building Construction - 2036

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.2168 | 7.1613 | 16.1178 | 0.0310 | | 0.0904 | 0.0904 | | 0.0904 | 0.0904 | | 2,897.546 8 | 2,897.546 8 | 0.1079 | | 2,900.244 8 |
| **Total** | **1.2168** | **7.1613** | **16.1178** | **0.0310** | | **0.0904** | **0.0904** | | **0.0904** | **0.0904** | | **2,897.546 8** | **2,897.546 8** | **0.1079** | | **2,900.244 8** |

## 3.4 Building Construction - 2036

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0332 | 1.2813 | 0.2025 | 4.8000e-003 | 0.1221 | 1.2700e-003 | 0.1234 | 0.0352 | 1.2200e-003 | 0.0364 | | 502.0555 | 502.0555 | 0.0396 | | 503.0462 |
| Worker | 0.1025 | 0.0470 | 0.7693 | 3.3500e-003 | 0.5093 | 1.5900e-003 | 0.5109 | 0.1351 | 1.4700e-003 | 0.1366 | | 334.6275 | 334.6275 | 4.1200e-003 | | 334.7304 |
| **Total** | **0.1357** | **1.3283** | **0.9718** | **8.1500e-003** | **0.6314** | **2.8600e-003** | **0.6343** | **0.1703** | **2.6900e-003** | **0.1729** | | **836.6830** | **836.6830** | **0.0438** | | **837.7766** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.2168 | 7.1613 | 16.1178 | 0.0310 | | 0.0904 | 0.0904 | | 0.0904 | 0.0904 | 0.0000 | 2,897.546 8 | 2,897.546 8 | 0.1079 | | 2,900.244 8 |
| **Total** | **1.2168** | **7.1613** | **16.1178** | **0.0310** | | **0.0904** | **0.0904** | | **0.0904** | **0.0904** | **0.0000** | **2,897.546 8** | **2,897.546 8** | **0.1079** | | **2,900.244 8** |

## 3.4 Building Construction - 2036

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0332 | 1.2813 | 0.2025 | 4.8000e-003 | 0.1221 | 1.2700e-003 | 0.1234 | 0.0352 | 1.2200e-003 | 0.0364 | | 502.0555 | 502.0555 | 0.0396 | | 503.0462 |
| Worker | 0.1025 | 0.0470 | 0.7693 | 3.3500e-003 | 0.5093 | 1.5900e-003 | 0.5109 | 0.1351 | 1.4700e-003 | 0.1366 | | 334.6275 | 334.6275 | 4.1200e-003 | | 334.7304 |
| **Total** | **0.1357** | **1.3283** | **0.9718** | **8.1500e-003** | **0.6314** | **2.8600e-003** | **0.6343** | **0.1703** | **2.6900e-003** | **0.1729** | | **836.6830** | **836.6830** | **0.0438** | | **837.7766** |

## 3.4 Building Construction - 2037

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.2168 | 7.1613 | 16.1178 | 0.0310 | | 0.0904 | 0.0904 | | 0.0904 | 0.0904 | | 2,897.5468 | 2,897.5468 | 0.1079 | | 2,900.2448 |
| **Total** | **1.2168** | **7.1613** | **16.1178** | **0.0310** | | **0.0904** | **0.0904** | | **0.0904** | **0.0904** | | **2,897.5468** | **2,897.5468** | **0.1079** | | **2,900.2448** |

## 3.4 Building Construction - 2037

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0332 | 1.2813 | 0.2025 | 4.8000e-003 | 0.1221 | 1.2700e-003 | 0.1234 | 0.0352 | 1.2200e-003 | 0.0364 | | 502.0555 | 502.0555 | 0.0396 | | 503.0462 |
| Worker | 0.1025 | 0.0470 | 0.7693 | 3.3500e-003 | 0.5093 | 1.5900e-003 | 0.5109 | 0.1351 | 1.4700e-003 | 0.1366 | | 334.6275 | 334.6275 | 4.1200e-003 | | 334.7304 |
| **Total** | **0.1357** | **1.3283** | **0.9718** | **8.1500e-003** | **0.6314** | **2.8600e-003** | **0.6343** | **0.1703** | **2.6900e-003** | **0.1729** | | **836.6830** | **836.6830** | **0.0438** | | **837.7766** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.2168 | 7.1613 | 16.1178 | 0.0310 | | 0.0904 | 0.0904 | | 0.0904 | 0.0904 | 0.0000 | 2,897.546 8 | 2,897.546 8 | 0.1079 | | 2,900.244 8 |
| **Total** | **1.2168** | **7.1613** | **16.1178** | **0.0310** | | **0.0904** | **0.0904** | | **0.0904** | **0.0904** | **0.0000** | **2,897.546 8** | **2,897.546 8** | **0.1079** | | **2,900.244 8** |

## 3.4 Building Construction - 2037

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0332 | 1.2813 | 0.2025 | 4.8000e-003 | 0.1221 | 1.2700e-003 | 0.1234 | 0.0352 | 1.2200e-003 | 0.0364 | | 502.0555 | 502.0555 | 0.0396 | | 503.0462 |
| Worker | 0.1025 | 0.0470 | 0.7693 | 3.3500e-003 | 0.5093 | 1.5900e-003 | 0.5109 | 0.1351 | 1.4700e-003 | 0.1366 | | 334.6275 | 334.6275 | 4.1200e-003 | | 334.7304 |
| **Total** | **0.1357** | **1.3283** | **0.9718** | **8.1500e-003** | **0.6314** | **2.8600e-003** | **0.6343** | **0.1703** | **2.6900e-003** | **0.1729** | | **836.6830** | **836.6830** | **0.0438** | | **837.7766** |

## 3.5 Paving - 2037

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.1405 | 4.8761 | 15.8203 | 0.0281 | | 0.1874 | 0.1874 | | 0.1874 | 0.1874 | | 2,656.516 8 | 2,656.516 8 | 0.1022 | | 2,659.072 7 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.1405** | **4.8761** | **15.8203** | **0.0281** | | **0.1874** | **0.1874** | | **0.1874** | **0.1874** | | **2,656.516 8** | **2,656.516 8** | **0.1022** | | **2,659.072 7** |

## 3.5 Paving - 2037

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0248 | 0.0114 | 0.1861 | 8.1000e-004 | 0.1232 | 3.9000e-004 | 0.1236 | 0.0327 | 3.5000e-004 | 0.0330 | | 80.9583 | 80.9583 | 1.0000e-003 | | 80.9832 |
| **Total** | **0.0248** | **0.0114** | **0.1861** | **8.1000e-004** | **0.1232** | **3.9000e-004** | **0.1236** | **0.0327** | **3.5000e-004** | **0.0330** | | **80.9583** | **80.9583** | **1.0000e-003** | | **80.9832** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.1405 | 4.8761 | 15.8203 | 0.0281 | | 0.1874 | 0.1874 | | 0.1874 | 0.1874 | 0.0000 | 2,656.5168 | 2,656.5168 | 0.1022 | | 2,659.0726 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.1405** | **4.8761** | **15.8203** | **0.0281** | | **0.1874** | **0.1874** | | **0.1874** | **0.1874** | **0.0000** | **2,656.5168** | **2,656.5168** | **0.1022** | | **2,659.0726** |

## 3.5 Paving - 2037

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0248 | 0.0114 | 0.1861 | 8.1000e-004 | 0.1232 | 3.9000e-004 | 0.1236 | 0.0327 | 3.5000e-004 | 0.0330 | | 80.9583 | 80.9583 | 1.0000e-003 | | 80.9832 |
| **Total** | **0.0248** | **0.0114** | **0.1861** | **8.1000e-004** | **0.1232** | **3.9000e-004** | **0.1236** | **0.0327** | **3.5000e-004** | **0.0330** | | **80.9583** | **80.9583** | **1.0000e-003** | | **80.9832** |

## 3.6 Architectural Coating - 2037

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 45.7894 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1179 | 0.7577 | 1.7943 | 2.9700e-003 | | 9.9000e-003 | 9.9000e-003 | | 9.9000e-003 | 9.9000e-003 | | 281.4481 | 281.4481 | 0.0104 | | 281.7081 |
| **Total** | **45.9073** | **0.7577** | **1.7943** | **2.9700e-003** | | **9.9000e-003** | **9.9000e-003** | | **9.9000e-003** | **9.9000e-003** | | **281.4481** | **281.4481** | **0.0104** | | **281.7081** |

### 3.6 Architectural Coating - 2037

**Unmitigated Construction Off-Site**

| Category | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0198 | 9.1000e-003 | 0.1489 | 6.5000e-004 | 0.0986 | 3.1000e-004 | 0.0989 | 0.0262 | 2.8000e-004 | 0.0264 | | 64.7666 | 64.7666 | 8.0000e-004 | | 64.7865 |
| **Total** | **0.0198** | **9.1000e-003** | **0.1489** | **6.5000e-004** | **0.0986** | **3.1000e-004** | **0.0989** | **0.0262** | **2.8000e-004** | **0.0264** | | **64.7666** | **64.7666** | **8.0000e-004** | | **64.7865** |

**Mitigated Construction On-Site**

| Category | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 45.7894 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1179 | 0.7577 | 1.7943 | 2.9700e-003 | | 9.9000e-003 | 9.9000e-003 | | 9.9000e-003 | 9.9000e-003 | 0.0000 | 281.4481 | 281.4481 | 0.0104 | | 281.7081 |
| **Total** | **45.9073** | **0.7577** | **1.7943** | **2.9700e-003** | | **9.9000e-003** | **9.9000e-003** | | **9.9000e-003** | **9.9000e-003** | **0.0000** | **281.4481** | **281.4481** | **0.0104** | | **281.7081** |

## 3.6 Architectural Coating - 2037

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0198 | 9.1000e-003 | 0.1489 | 6.5000e-004 | 0.0986 | 3.1000e-004 | 0.0989 | 0.0262 | 2.8000e-004 | 0.0264 | | 64.7666 | 64.7666 | 8.0000e-004 | | 64.7865 |
| **Total** | **0.0198** | **9.1000e-003** | **0.1489** | **6.5000e-004** | **0.0986** | **3.1000e-004** | **0.0989** | **0.0262** | **2.8000e-004** | **0.0264** | | **64.7666** | **64.7666** | **8.0000e-004** | | **64.7865** |

# 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 1.6305 | 5.2058 | 17.3080 | 0.0756 | 9.2550 | 0.0411 | 9.2961 | 2.4718 | 0.0382 | 2.5100 | | 7,678.3585 | 7,678.3585 | 0.3230 | | 7,686.4341 |
| Unmitigated | 1.6605 | 5.3631 | 18.4006 | 0.0808 | 9.9409 | 0.0437 | 9.9847 | 2.6550 | 0.0406 | 2.6956 | | 8,206.4403 | 8,206.4403 | 0.3368 | | 8,214.8591 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Single Family Housing | 1,623.68 | 1,640.88 | 1470.60 | 4,591,816 | 4,274,981 |
| Total | 1,623.68 | 1,640.88 | 1,470.60 | 4,591,816 | 4,274,981 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Single Family Housing | 10.80 | 7.30 | 7.50 | 42.30 | 19.60 | 38.10 | 86 | 11 | 3 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Single Family Housing | 0.498700 | 0.230800 | 0.170300 | 0.060900 | 0.000800 | 0.001000 | 0.007600 | 0.018000 | 0.000000 | 0.004400 | 0.002700 | 0.001200 | 0.003600 |

# 5.0 Energy Detail

Historical Energy Use: N

## 5.1 Mitigation Measures Energy

Exceed Title 24

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.1249 | 1.0673 | 0.4542 | 6.8100e-003 | | 0.0863 | 0.0863 | | 0.0863 | 0.0863 | | 1,362.4553 | 1,362.4553 | 0.0261 | 0.0250 | 1,370.5517 |
| NaturalGas Unmitigated | 0.1329 | 1.1354 | 0.4832 | 7.2500e-003 | | 0.0918 | 0.0918 | | 0.0918 | 0.0918 | | 1,449.4702 | 1,449.4702 | 0.0278 | 0.0266 | 1,458.0837 |

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| Single Family Housing | 12320.5 | 0.1329 | 1.1354 | 0.4832 | 7.2500e-003 | | 0.0918 | 0.0918 | | 0.0918 | 0.0918 | | 1,449.4702 | 1,449.4702 | 0.0278 | 0.0266 | 1,458.0837 |
| **Total** | | **0.1329** | **1.1354** | **0.4832** | **7.2500e-003** | | **0.0918** | **0.0918** | | **0.0918** | **0.0918** | | **1,449.4702** | **1,449.4702** | **0.0278** | **0.0266** | **1,458.0837** |

## 5.2 Energy by Land Use - NaturalGas

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| Single Family Housing | 11.5809 | 0.1249 | 1.0673 | 0.4542 | 6.8100e-003 | | 0.0863 | 0.0863 | | 0.0863 | 0.0863 | | 1,362.4553 | 1,362.4553 | 0.0261 | 0.0250 | 1,370.5517 |
| **Total** | | **0.1249** | **1.0673** | **0.4542** | **6.8100e-003** | | **0.0863** | **0.0863** | | **0.0863** | **0.0863** | | **1,362.4553** | **1,362.4553** | **0.0261** | **0.0250** | **1,370.5517** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 7.9224 | 1.7324 | 14.8205 | 0.0108 | | 0.2056 | 0.2056 | | 0.2056 | 0.2056 | 0.0000 | 2,028.8451 | 2,028.8451 | 0.0627 | 0.0367 | 2,041.3583 |
| Unmitigated | 24.2684 | 4.0204 | 155.0727 | 0.4684 | | 23.0852 | 23.0852 | | 23.0852 | 23.0852 | 3,377.0356 | 2,028.8451 | 5,405.8807 | 15.8497 | 0.0367 | 5,813.0677 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 1.5923 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 6.6254 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 15.6274 | 3.8572 | 140.9200 | 0.4676 | | 23.0065 | 23.0065 | | 23.0065 | 23.0065 | 3,377.0356 | 2,003.2941 | 5,380.3297 | 15.8254 | 0.0367 | 5,786.9082 |
| Landscaping | 0.4233 | 0.1632 | 14.1527 | 7.5000e-004 | | 0.0787 | 0.0787 | | 0.0787 | 0.0787 | | 25.5510 | 25.5510 | 0.0243 | | 26.1596 |
| **Total** | **24.2684** | **4.0204** | **155.0727** | **0.4684** | | **23.0852** | **23.0852** | | **23.0852** | **23.0852** | **3,377.0356** | **2,028.8451** | **5,405.8807** | **15.8497** | **0.0367** | **5,813.0677** |

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.6900 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 6.6254 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.1836 | 1.5693 | 0.6678 | 0.0100 | | 0.1269 | 0.1269 | | 0.1269 | 0.1269 | 0.0000 | 2,003.294 1 | 2,003.294 1 | 0.0384 | 0.0367 | 2,015.198 7 |
| Landscaping | 0.4233 | 0.1632 | 14.1527 | 7.5000e-004 | | 0.0787 | 0.0787 | | 0.0787 | 0.0787 | | 25.5510 | 25.5510 | 0.0243 | | 26.1596 |
| **Total** | **7.9224** | **1.7324** | **14.8205** | **0.0108** | | **0.2056** | **0.2056** | | **0.2056** | **0.2056** | **0.0000** | **2,028.845 1** | **2,028.845 1** | **0.0627** | **0.0367** | **2,041.358 3** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

# 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

### Fire Pumps and Emergency Generators

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

### Boilers

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

### User Defined Equipment

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

# CalEEMod Output

# Phase 4 Construction and Operations

# (Winter Daily)

# Lacey Ranch Master Plan Phase 4 Const and Ops

**Kings County, Winter**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| Single Family Housing | 172.00 | Dwelling Unit | 42.75 | 309,600.00 | 492 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 37 |
| **Climate Zone** | 3 | | | **Operational Year** | 2034 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 290 | **CH4 Intensity (lb/MWhr)** | 0.022 | **N2O Intensity (lb/MWhr)** | 0.005 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E Intensity Factors

Land Use - Project acres

Construction Phase -

Architectural Coating - Rule 4601 Architectural Coatings compliance

Vehicle Trips - ITE 10th Ed Trip Gen SFR 9.44, 9.54, 8.55

Woodstoves - Rule 4901 Residential Woodburning hearths allowed 2 per acre

Area Coating - Rule 4601 Architectural Coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Architectural Coatings

Energy Mitigation - 2019 Title 24

Water Mitigation - CalGreen indoor water savings and MWELO outdoor savings

Waste Mitigation - Calrecycle 75% diversion mandate

Fleet Mix - SJVAPCD Residential Fleet Mix for 2034

Lacey Ranch Master Plan Phase 4 Const and Ops - Kings County, Winter

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblArchitecturalCoating | EF_Residential_Exterior | 150.00 | 65.00 |
| tblArchitecturalCoating | EF_Residential_Interior | 150.00 | 65.00 |
| tblAreaMitigation | UseLowVOCPaintResidentialExteriorValue | 150 | 65 |
| tblAreaMitigation | UseLowVOCPaintResidentialInteriorValue | 150 | 65 |
| tblFleetMix | HHD | 0.16 | 0.02 |
| tblFleetMix | LDA | 0.53 | 0.50 |
| tblFleetMix | LDT1 | 0.03 | 0.23 |
| tblFleetMix | LDT2 | 0.16 | 0.17 |
| tblFleetMix | LHD1 | 9.1920e-003 | 8.0000e-004 |
| tblFleetMix | LHD2 | 3.4050e-003 | 1.0000e-003 |
| tblFleetMix | MCY | 4.9870e-003 | 2.7000e-003 |
| tblFleetMix | MDV | 0.09 | 0.06 |
| tblFleetMix | MH | 4.4200e-004 | 3.6000e-003 |
| tblFleetMix | MHD | 0.01 | 7.6000e-003 |
| tblFleetMix | OBUS | 1.6090e-003 | 0.00 |
| tblFleetMix | SBUS | 7.8600e-004 | 1.2000e-003 |
| tblFleetMix | UBUS | 1.2940e-003 | 4.4000e-003 |
| tblLandUse | LotAcreage | 55.84 | 42.75 |
| tblProjectCharacteristics | CH4IntensityFactor | 0.029 | 0.022 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 290 |
| tblProjectCharacteristics | N2OIntensityFactor | 0.006 | 0.005 |
| tblVehicleTrips | ST_TR | 9.91 | 9.54 |
| tblVehicleTrips | SU_TR | 8.62 | 8.55 |
| tblVehicleTrips | WD_TR | 9.52 | 9.44 |
| tblWoodstoves | NumberCatalytic | 42.75 | 31.07 |
| tblWoodstoves | NumberNoncatalytic | 42.75 | 31.07 |

# 2.0 Emissions Summary

## 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2034 | 3.3152 | 13.8651 | 23.2344 | 0.0709 | 18.2141 | 0.4885 | 18.6513 | 9.9699 | 0.4884 | 10.4070 | 0.0000 | 7,308.9922 | 7,308.9922 | 0.2927 | 0.0000 | 7,316.3106 |
| 2035 | 1.3523 | 8.4995 | 16.9756 | 0.0385 | 0.6314 | 0.0933 | 0.7247 | 0.1703 | 0.0931 | 0.2634 | 0.0000 | 3,676.9414 | 3,676.9414 | 0.1566 | 0.0000 | 3,680.8562 |
| 2036 | 1.3523 | 8.4995 | 16.9756 | 0.0385 | 0.6314 | 0.0933 | 0.7247 | 0.1703 | 0.0931 | 0.2634 | 0.0000 | 3,676.9414 | 3,676.9414 | 0.1566 | 0.0000 | 3,680.8562 |
| 2037 | 45.9267 | 8.4995 | 16.9756 | 0.0385 | 0.6314 | 0.1878 | 0.7247 | 0.1703 | 0.1878 | 0.2634 | 0.0000 | 3,676.9414 | 3,676.9414 | 0.1566 | 0.0000 | 3,680.8562 |
| **Maximum** | **45.9267** | **13.8651** | **23.2344** | **0.0709** | **18.2141** | **0.4885** | **18.6513** | **9.9699** | **0.4884** | **10.4070** | **0.0000** | **7,308.9922** | **7,308.9922** | **0.2927** | **0.0000** | **7,316.3106** |

## 2.1 Overall Construction (Maximum Daily Emission)

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2034 | 3.3152 | 13.8651 | 23.2344 | 0.0709 | 8.2777 | 0.4885 | 8.7148 | 4.5080 | 0.4884 | 4.9452 | 0.0000 | 7,308.9922 | 7,308.9922 | 0.2927 | 0.0000 | 7,316.3106 |
| 2035 | 1.3523 | 8.4995 | 16.9756 | 0.0385 | 0.6314 | 0.0933 | 0.7247 | 0.1703 | 0.0931 | 0.2634 | 0.0000 | 3,676.9414 | 3,676.9414 | 0.1566 | 0.0000 | 3,680.8562 |
| 2036 | 1.3523 | 8.4995 | 16.9756 | 0.0385 | 0.6314 | 0.0933 | 0.7247 | 0.1703 | 0.0931 | 0.2634 | 0.0000 | 3,676.9414 | 3,676.9414 | 0.1566 | 0.0000 | 3,680.8562 |
| 2037 | 45.9267 | 8.4995 | 16.9756 | 0.0385 | 0.6314 | 0.1878 | 0.7247 | 0.1703 | 0.1878 | 0.2634 | 0.0000 | 3,676.9414 | 3,676.9414 | 0.1566 | 0.0000 | 3,680.8562 |
| **Maximum** | **45.9267** | **13.8651** | **23.2344** | **0.0709** | **8.2777** | **0.4885** | **8.7148** | **4.5080** | **0.4884** | **4.9452** | **0.0000** | **7,308.9922** | **7,308.9922** | **0.2927** | **0.0000** | **7,316.3106** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **49.41** | **0.00** | **47.71** | **52.11** | **0.00** | **48.78** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 24.2684 | 4.0204 | 155.0727 | 0.4684 | | 23.0852 | 23.0852 | | 23.0852 | 23.0852 | 3,377.0356 | 2,028.8451 | 5,405.8807 | 15.8497 | 0.0367 | 5,813.0677 |
| Energy | 0.1329 | 1.1354 | 0.4832 | 7.2500e-003 | | 0.0918 | 0.0918 | | 0.0918 | 0.0918 | | 1,449.4702 | 1,449.4702 | 0.0278 | 0.0266 | 1,458.0837 |
| Mobile | 1.1634 | 5.5833 | 16.0567 | 0.0724 | 9.9409 | 0.0438 | 9.9847 | 2.6550 | 0.0407 | 2.6957 | | 7,367.9104 | 7,367.9104 | 0.3454 | | 7,376.5451 |
| **Total** | **25.5647** | **10.7391** | **171.6125** | **0.5480** | **9.9409** | **23.2208** | **33.1617** | **2.6550** | **23.2177** | **25.8727** | **3,377.0356** | **10,846.2257** | **14,223.2613** | **16.2229** | **0.0633** | **14,647.6966** |

### Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 7.9224 | 1.7324 | 14.8205 | 0.0108 | | 0.2056 | 0.2056 | | 0.2056 | 0.2056 | 0.0000 | 2,028.8451 | 2,028.8451 | 0.0627 | 0.0367 | 2,041.3583 |
| Energy | 0.1249 | 1.0673 | 0.4542 | 6.8100e-003 | | 0.0863 | 0.0863 | | 0.0863 | 0.0863 | | 1,362.4553 | 1,362.4553 | 0.0261 | 0.0250 | 1,370.5517 |
| Mobile | 1.1354 | 5.4076 | 15.2074 | 0.0677 | 9.2550 | 0.0412 | 9.2962 | 2.4718 | 0.0382 | 2.5100 | | 6,894.1599 | 6,894.1599 | 0.3326 | | 6,902.4745 |
| **Total** | **9.1827** | **8.2073** | **30.4820** | **0.0853** | **9.2550** | **0.3330** | **9.5880** | **2.4718** | **0.3301** | **2.8019** | **0.0000** | **10,285.4602** | **10,285.4602** | **0.4214** | **0.0617** | **10,314.3845** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | 64.08 | 23.58 | 82.24 | 84.43 | 6.90 | 98.57 | 71.09 | 6.90 | 98.58 | 89.17 | 100.00 | 5.17 | 27.69 | 97.40 | 2.51 | 29.58 |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Site Preparation | Site Preparation | 1/1/2034 | 2/10/2034 | 5 | 30 | |
| 2 | Grading | Grading | 2/11/2034 | 5/26/2034 | 5 | 75 | |
| 3 | Building Construction | Building Construction | 5/27/2034 | 3/27/2037 | 5 | 740 | |
| 4 | Paving | Paving | 3/28/2037 | 6/12/2037 | 5 | 55 | |
| 5 | Architectural Coating | Architectural Coating | 6/13/2037 | 8/28/2037 | 5 | 55 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 187.5**

**Acres of Paving: 0**

**Residential Indoor: 626,940; Residential Outdoor: 208,980; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Site Preparation | Rubber Tired Dozers | 3 | 8.00 | 247 | 0.40 |
| Site Preparation | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |
| Grading | Excavators | 2 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 1 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 2 | 8.00 | 97 | 0.37 |
| Building Construction | Cranes | 1 | 7.00 | 231 | 0.29 |
| Building Construction | Forklifts | 3 | 8.00 | 89 | 0.20 |
| Building Construction | Generator Sets | 1 | 8.00 | 84 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | 3 | 7.00 | 97 | 0.37 |
| Building Construction | Welders | 1 | 8.00 | 46 | 0.45 |
| Paving | Pavers | 2 | 8.00 | 130 | 0.42 |
| Paving | Paving Equipment | 2 | 8.00 | 132 | 0.36 |
| Paving | Rollers | 2 | 8.00 | 80 | 0.38 |
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Site Preparation | 7 | 18.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Grading | 8 | 20.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Building Construction | 9 | 62.00 | 18.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Paving | 6 | 15.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |
| Architectural Coating | 1 | 12.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

## 3.2 Site Preparation - 2034

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 18.0663 | 0.0000 | 18.0663 | 9.9307 | 0.0000 | 9.9307 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.4399 | 13.6680 | 16.2918 | 0.0466 | | 0.4367 | 0.4367 | | 0.4367 | 0.4367 | | 4,409.7537 | 4,409.7537 | 0.2176 | | 4,415.1936 |
| **Total** | **2.4399** | **13.6680** | **16.2918** | **0.0466** | **18.0663** | **0.4367** | **18.5029** | **9.9307** | **0.4367** | **10.3673** | | **4,409.7537** | **4,409.7537** | **0.2176** | | **4,415.1936** |

## 3.2 Site Preparation - 2034

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0311 | 0.0170 | 0.1894 | 8.6000e-004 | 0.1479 | 4.9000e-004 | 0.1484 | 0.0392 | 4.5000e-004 | 0.0397 | | 86.2953 | 86.2953 | 1.1000e-003 | | 86.3228 |
| **Total** | **0.0311** | **0.0170** | **0.1894** | **8.6000e-004** | **0.1479** | **4.9000e-004** | **0.1484** | **0.0392** | **4.5000e-004** | **0.0397** | | **86.2953** | **86.2953** | **1.1000e-003** | | **86.3228** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.1298 | 0.0000 | 8.1298 | 4.4688 | 0.0000 | 4.4688 | | | 0.0000 | | | 0.0000 |
| Off-Road | 2.4399 | 13.6680 | 16.2918 | 0.0466 | | 0.4367 | 0.4367 | | 0.4367 | 0.4367 | 0.0000 | 4,409.7537 | 4,409.7537 | 0.2176 | | 4,415.1936 |
| **Total** | **2.4399** | **13.6680** | **16.2918** | **0.0466** | **8.1298** | **0.4367** | **8.5665** | **4.4688** | **0.4367** | **4.9055** | **0.0000** | **4,409.7537** | **4,409.7537** | **0.2176** | | **4,415.1936** |

## 3.2 Site Preparation - 2034

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0311 | 0.0170 | 0.1894 | 8.6000e-004 | 0.1479 | 4.9000e-004 | 0.1484 | 0.0392 | 4.5000e-004 | 0.0397 | | 86.2953 | 86.2953 | 1.1000e-003 | | 86.3228 |
| **Total** | **0.0311** | **0.0170** | **0.1894** | **8.6000e-004** | **0.1479** | **4.9000e-004** | **0.1484** | **0.0392** | **4.5000e-004** | **0.0397** | | **86.2953** | **86.2953** | **1.1000e-003** | | **86.3228** |

## 3.3 Grading - 2034

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 8.6733 | 0.0000 | 8.6733 | 3.5965 | 0.0000 | 3.5965 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.2807 | 13.8462 | 23.0239 | 0.0699 | | 0.4879 | 0.4879 | | 0.4879 | 0.4879 | | 7,213.1086 | 7,213.1086 | 0.2915 | | 7,220.3963 |
| **Total** | **3.2807** | **13.8462** | **23.0239** | **0.0699** | **8.6733** | **0.4879** | **9.1613** | **3.5965** | **0.4879** | **4.0844** | | **7,213.1086** | **7,213.1086** | **0.2915** | | **7,220.3963** |

## 3.3 Grading - 2034

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0345 | 0.0189 | 0.2105 | 9.6000e-004 | 0.1643 | 5.5000e-004 | 0.1648 | 0.0436 | 5.0000e-004 | 0.0441 | | 95.8836 | 95.8836 | 1.2300e-003 | | 95.9143 |
| **Total** | **0.0345** | **0.0189** | **0.2105** | **9.6000e-004** | **0.1643** | **5.5000e-004** | **0.1648** | **0.0436** | **5.0000e-004** | **0.0441** | | **95.8836** | **95.8836** | **1.2300e-003** | | **95.9143** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 3.9030 | 0.0000 | 3.9030 | 1.6184 | 0.0000 | 1.6184 | | | 0.0000 | | | 0.0000 |
| Off-Road | 3.2807 | 13.8462 | 23.0239 | 0.0699 | | 0.4879 | 0.4879 | | 0.4879 | 0.4879 | 0.0000 | 7,213.1086 | 7,213.1086 | 0.2915 | | 7,220.3963 |
| **Total** | **3.2807** | **13.8462** | **23.0239** | **0.0699** | **3.9030** | **0.4879** | **4.3909** | **1.6184** | **0.4879** | **2.1064** | **0.0000** | **7,213.1086** | **7,213.1086** | **0.2915** | | **7,220.3963** |

## 3.3 Grading - 2034

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0345 | 0.0189 | 0.2105 | 9.6000e-004 | 0.1643 | 5.5000e-004 | 0.1648 | 0.0436 | 5.0000e-004 | 0.0441 | | 95.8836 | 95.8836 | 1.2300e-003 | | 95.9143 |
| **Total** | **0.0345** | **0.0189** | **0.2105** | **9.6000e-004** | **0.1643** | **5.5000e-004** | **0.1648** | **0.0436** | **5.0000e-004** | **0.0441** | | **95.8836** | **95.8836** | **1.2300e-003** | | **95.9143** |

## 3.4 Building Construction - 2034

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | | 2,897.546 8 | 2,897.546 8 | 0.1162 | | 2,900.452 9 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | | **2,897.546 8** | **2,897.546 8** | **0.1162** | | **2,900.452 9** |

## 3.4 Building Construction - 2034

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0353 | 1.2886 | 0.2425 | 4.6500e-003 | 0.1221 | 1.3000e-003 | 0.1234 | 0.0352 | 1.2400e-003 | 0.0364 | | 486.5097 | 486.5097 | 0.0451 | | 487.6374 |
| Worker | 0.1070 | 0.0587 | 0.6525 | 2.9800e-003 | 0.5093 | 1.7000e-003 | 0.5110 | 0.1351 | 1.5700e-003 | 0.1367 | | 297.2392 | 297.2392 | 3.8000e-003 | | 297.3342 |
| **Total** | **0.1423** | **1.3472** | **0.8950** | **7.6300e-003** | **0.6314** | **3.0000e-003** | **0.6344** | **0.1703** | **2.8100e-003** | **0.1731** | | **783.7489** | **783.7489** | **0.0489** | | **784.9717** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.3091 | 7.9346 | 16.1570 | 0.0310 | | 0.1481 | 0.1481 | | 0.1481 | 0.1481 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1162 | | 2,900.4529 |
| **Total** | **1.3091** | **7.9346** | **16.1570** | **0.0310** | | **0.1481** | **0.1481** | | **0.1481** | **0.1481** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1162** | | **2,900.4529** |

## 3.4 Building Construction - 2034

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0353 | 1.2886 | 0.2425 | 4.6500e-003 | 0.1221 | 1.3000e-003 | 0.1234 | 0.0352 | 1.2400e-003 | 0.0364 | | 486.5097 | 486.5097 | 0.0451 | | 487.6374 |
| Worker | 0.1070 | 0.0587 | 0.6525 | 2.9800e-003 | 0.5093 | 1.7000e-003 | 0.5110 | 0.1351 | 1.5700e-003 | 0.1367 | | 297.2392 | 297.2392 | 3.8000e-003 | | 297.3342 |
| **Total** | **0.1423** | **1.3472** | **0.8950** | **7.6300e-003** | **0.6314** | **3.0000e-003** | **0.6344** | **0.1703** | **2.8100e-003** | **0.1731** | | **783.7489** | **783.7489** | **0.0489** | | **784.9717** |

## 3.4 Building Construction - 2035

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.2168 | 7.1613 | 16.1178 | 0.0310 | | 0.0904 | 0.0904 | | 0.0904 | 0.0904 | | 2,897.5468 | 2,897.5468 | 0.1079 | | 2,900.2448 |
| **Total** | **1.2168** | **7.1613** | **16.1178** | **0.0310** | | **0.0904** | **0.0904** | | **0.0904** | **0.0904** | | **2,897.5468** | **2,897.5468** | **0.1079** | | **2,900.2448** |

## 3.4 Building Construction - 2035

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0352 | 1.2832 | 0.2412 | 4.6500e-003 | 0.1221 | 1.2900e-003 | 0.1234 | 0.0352 | 1.2300e-003 | 0.0364 | | 486.3763 | 486.3763 | 0.0452 | | 487.5063 |
| Worker | 0.1003 | 0.0550 | 0.6167 | 2.9300e-003 | 0.5093 | 1.5900e-003 | 0.5109 | 0.1351 | 1.4700e-003 | 0.1366 | | 293.0183 | 293.0183 | 3.4700e-003 | | 293.1052 |
| **Total** | **0.1355** | **1.3381** | **0.8578** | **7.5800e-003** | **0.6314** | **2.8800e-003** | **0.6343** | **0.1703** | **2.7000e-003** | **0.1730** | | **779.3947** | **779.3947** | **0.0487** | | **780.6114** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.2168 | 7.1613 | 16.1178 | 0.0310 | | 0.0904 | 0.0904 | | 0.0904 | 0.0904 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1079 | | 2,900.2448 |
| **Total** | **1.2168** | **7.1613** | **16.1178** | **0.0310** | | **0.0904** | **0.0904** | | **0.0904** | **0.0904** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1079** | | **2,900.2448** |

## 3.4 Building Construction - 2035

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0352 | 1.2832 | 0.2412 | 4.6500e-003 | 0.1221 | 1.2900e-003 | 0.1234 | 0.0352 | 1.2300e-003 | 0.0364 | | 486.3763 | 486.3763 | 0.0452 | | 487.5063 |
| Worker | 0.1003 | 0.0550 | 0.6167 | 2.9300e-003 | 0.5093 | 1.5900e-003 | 0.5109 | 0.1351 | 1.4700e-003 | 0.1366 | | 293.0183 | 293.0183 | 3.4700e-003 | | 293.1052 |
| **Total** | **0.1355** | **1.3381** | **0.8578** | **7.5800e-003** | **0.6314** | **2.8800e-003** | **0.6343** | **0.1703** | **2.7000e-003** | **0.1730** | | **779.3947** | **779.3947** | **0.0487** | | **780.6114** |

## 3.4 Building Construction - 2036

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.2168 | 7.1613 | 16.1178 | 0.0310 | | 0.0904 | 0.0904 | | 0.0904 | 0.0904 | | 2,897.5468 | 2,897.5468 | 0.1079 | | 2,900.2448 |
| **Total** | **1.2168** | **7.1613** | **16.1178** | **0.0310** | | **0.0904** | **0.0904** | | **0.0904** | **0.0904** | | **2,897.5468** | **2,897.5468** | **0.1079** | | **2,900.2448** |

## 3.4 Building Construction - 2036

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0352 | 1.2832 | 0.2412 | 4.6500e-003 | 0.1221 | 1.2900e-003 | 0.1234 | 0.0352 | 1.2300e-003 | 0.0364 | | 486.3763 | 486.3763 | 0.0452 | | 487.5063 |
| Worker | 0.1003 | 0.0550 | 0.6167 | 2.9300e-003 | 0.5093 | 1.5900e-003 | 0.5109 | 0.1351 | 1.4700e-003 | 0.1366 | | 293.0183 | 293.0183 | 3.4700e-003 | | 293.1052 |
| **Total** | **0.1355** | **1.3381** | **0.8578** | **7.5800e-003** | **0.6314** | **2.8800e-003** | **0.6343** | **0.1703** | **2.7000e-003** | **0.1730** | | **779.3947** | **779.3947** | **0.0487** | | **780.6114** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.2168 | 7.1613 | 16.1178 | 0.0310 | | 0.0904 | 0.0904 | | 0.0904 | 0.0904 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1079 | | 2,900.2448 |
| **Total** | **1.2168** | **7.1613** | **16.1178** | **0.0310** | | **0.0904** | **0.0904** | | **0.0904** | **0.0904** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1079** | | **2,900.2448** |

## 3.4 Building Construction - 2036

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0352 | 1.2832 | 0.2412 | 4.6500e-003 | 0.1221 | 1.2900e-003 | 0.1234 | 0.0352 | 1.2300e-003 | 0.0364 | | 486.3763 | 486.3763 | 0.0452 | | 487.5063 |
| Worker | 0.1003 | 0.0550 | 0.6167 | 2.9300e-003 | 0.5093 | 1.5900e-003 | 0.5109 | 0.1351 | 1.4700e-003 | 0.1366 | | 293.0183 | 293.0183 | 3.4700e-003 | | 293.1052 |
| **Total** | **0.1355** | **1.3381** | **0.8578** | **7.5800e-003** | **0.6314** | **2.8800e-003** | **0.6343** | **0.1703** | **2.7000e-003** | **0.1730** | | **779.3947** | **779.3947** | **0.0487** | | **780.6114** |

## 3.4 Building Construction - 2037

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.2168 | 7.1613 | 16.1178 | 0.0310 | | 0.0904 | 0.0904 | | 0.0904 | 0.0904 | | 2,897.546 8 | 2,897.546 8 | 0.1079 | | 2,900.244 8 |
| **Total** | **1.2168** | **7.1613** | **16.1178** | **0.0310** | | **0.0904** | **0.0904** | | **0.0904** | **0.0904** | | **2,897.546 8** | **2,897.546 8** | **0.1079** | | **2,900.244 8** |

## 3.4 Building Construction - 2037

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0352 | 1.2832 | 0.2412 | 4.6500e-003 | 0.1221 | 1.2900e-003 | 0.1234 | 0.0352 | 1.2300e-003 | 0.0364 | | 486.3763 | 486.3763 | 0.0452 | | 487.5063 |
| Worker | 0.1003 | 0.0550 | 0.6167 | 2.9300e-003 | 0.5093 | 1.5900e-003 | 0.5109 | 0.1351 | 1.4700e-003 | 0.1366 | | 293.0183 | 293.0183 | 3.4700e-003 | | 293.1052 |
| **Total** | **0.1355** | **1.3381** | **0.8578** | **7.5800e-003** | **0.6314** | **2.8800e-003** | **0.6343** | **0.1703** | **2.7000e-003** | **0.1730** | | **779.3947** | **779.3947** | **0.0487** | | **780.6114** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.2168 | 7.1613 | 16.1178 | 0.0310 | | 0.0904 | 0.0904 | | 0.0904 | 0.0904 | 0.0000 | 2,897.5468 | 2,897.5468 | 0.1079 | | 2,900.2448 |
| **Total** | **1.2168** | **7.1613** | **16.1178** | **0.0310** | | **0.0904** | **0.0904** | | **0.0904** | **0.0904** | **0.0000** | **2,897.5468** | **2,897.5468** | **0.1079** | | **2,900.2448** |

## 3.4 Building Construction - 2037

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0352 | 1.2832 | 0.2412 | 4.6500e-003 | 0.1221 | 1.2900e-003 | 0.1234 | 0.0352 | 1.2300e-003 | 0.0364 | | 486.3763 | 486.3763 | 0.0452 | | 487.5063 |
| Worker | 0.1003 | 0.0550 | 0.6167 | 2.9300e-003 | 0.5093 | 1.5900e-003 | 0.5109 | 0.1351 | 1.4700e-003 | 0.1366 | | 293.0183 | 293.0183 | 3.4700e-003 | | 293.1052 |
| **Total** | **0.1355** | **1.3381** | **0.8578** | **7.5800e-003** | **0.6314** | **2.8800e-003** | **0.6343** | **0.1703** | **2.7000e-003** | **0.1730** | | **779.3947** | **779.3947** | **0.0487** | | **780.6114** |

## 3.5 Paving - 2037

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.1405 | 4.8761 | 15.8203 | 0.0281 | | 0.1874 | 0.1874 | | 0.1874 | 0.1874 | | 2,656.5168 | 2,656.5168 | 0.1022 | | 2,659.0727 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.1405** | **4.8761** | **15.8203** | **0.0281** | | **0.1874** | **0.1874** | | **0.1874** | **0.1874** | | **2,656.5168** | **2,656.5168** | **0.1022** | | **2,659.0727** |

## 3.5 Paving - 2037

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0243 | 0.0133 | 0.1492 | 7.1000e-004 | 0.1232 | 3.9000e-004 | 0.1236 | 0.0327 | 3.5000e-004 | 0.0330 | | 70.8915 | 70.8915 | 8.4000e-004 | | 70.9125 |
| **Total** | **0.0243** | **0.0133** | **0.1492** | **7.1000e-004** | **0.1232** | **3.9000e-004** | **0.1236** | **0.0327** | **3.5000e-004** | **0.0330** | | **70.8915** | **70.8915** | **8.4000e-004** | | **70.9125** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Off-Road | 1.1405 | 4.8761 | 15.8203 | 0.0281 | | 0.1874 | 0.1874 | | 0.1874 | 0.1874 | 0.0000 | 2,656.5168 | 2,656.5168 | 0.1022 | | 2,659.0726 |
| Paving | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| **Total** | **1.1405** | **4.8761** | **15.8203** | **0.0281** | | **0.1874** | **0.1874** | | **0.1874** | **0.1874** | **0.0000** | **2,656.5168** | **2,656.5168** | **0.1022** | | **2,659.0726** |

## 3.5 Paving - 2037

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0243 | 0.0133 | 0.1492 | 7.1000e-004 | 0.1232 | 3.9000e-004 | 0.1236 | 0.0327 | 3.5000e-004 | 0.0330 | | 70.8915 | 70.8915 | 8.4000e-004 | | 70.9125 |
| **Total** | **0.0243** | **0.0133** | **0.1492** | **7.1000e-004** | **0.1232** | **3.9000e-004** | **0.1236** | **0.0327** | **3.5000e-004** | **0.0330** | | **70.8915** | **70.8915** | **8.4000e-004** | | **70.9125** |

## 3.6 Architectural Coating - 2037

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 45.7894 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1179 | 0.7577 | 1.7943 | 2.9700e-003 | | 9.9000e-003 | 9.9000e-003 | | 9.9000e-003 | 9.9000e-003 | | 281.4481 | 281.4481 | 0.0104 | | 281.7081 |
| **Total** | **45.9073** | **0.7577** | **1.7943** | **2.9700e-003** | | **9.9000e-003** | **9.9000e-003** | | **9.9000e-003** | **9.9000e-003** | | **281.4481** | **281.4481** | **0.0104** | | **281.7081** |

## 3.6 Architectural Coating - 2037

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0194 | 0.0106 | 0.1194 | 5.7000e-004 | 0.0986 | 3.1000e-004 | 0.0989 | 0.0262 | 2.8000e-004 | 0.0264 | | 56.7132 | 56.7132 | 6.7000e-004 | | 56.7300 |
| **Total** | **0.0194** | **0.0106** | **0.1194** | **5.7000e-004** | **0.0986** | **3.1000e-004** | **0.0989** | **0.0262** | **2.8000e-004** | **0.0264** | | **56.7132** | **56.7132** | **6.7000e-004** | | **56.7300** |

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 45.7894 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1179 | 0.7577 | 1.7943 | 2.9700e-003 | | 9.9000e-003 | 9.9000e-003 | | 9.9000e-003 | 9.9000e-003 | 0.0000 | 281.4481 | 281.4481 | 0.0104 | | 281.7081 |
| **Total** | **45.9073** | **0.7577** | **1.7943** | **2.9700e-003** | | **9.9000e-003** | **9.9000e-003** | | **9.9000e-003** | **9.9000e-003** | **0.0000** | **281.4481** | **281.4481** | **0.0104** | | **281.7081** |

### 3.6 Architectural Coating - 2037

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.0194 | 0.0106 | 0.1194 | 5.7000e-004 | 0.0986 | 3.1000e-004 | 0.0989 | 0.0262 | 2.8000e-004 | 0.0264 | | 56.7132 | 56.7132 | 6.7000e-004 | | 56.7300 |
| **Total** | **0.0194** | **0.0106** | **0.1194** | **5.7000e-004** | **0.0986** | **3.1000e-004** | **0.0989** | **0.0262** | **2.8000e-004** | **0.0264** | | **56.7132** | **56.7132** | **6.7000e-004** | | **56.7300** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 1.1354 | 5.4076 | 15.2074 | 0.0677 | 9.2550 | 0.0412 | 9.2962 | 2.4718 | 0.0382 | 2.5100 | | 6,894.159 9 | 6,894.159 9 | 0.3326 | | 6,902.474 5 |
| Unmitigated | 1.1634 | 5.5833 | 16.0567 | 0.0724 | 9.9409 | 0.0438 | 9.9847 | 2.6550 | 0.0407 | 2.6957 | | 7,367.910 4 | 7,367.910 4 | 0.3454 | | 7,376.545 1 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Single Family Housing | 1,623.68 | 1,640.88 | 1470.60 | 4,591,816 | 4,274,981 |
| Total | 1,623.68 | 1,640.88 | 1,470.60 | 4,591,816 | 4,274,981 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Single Family Housing | 10.80 | 7.30 | 7.50 | 42.30 | 19.60 | 38.10 | 86 | 11 | 3 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Single Family Housing | 0.498700 | 0.230800 | 0.170300 | 0.060900 | 0.000800 | 0.001000 | 0.007600 | 0.018000 | 0.000000 | 0.004400 | 0.002700 | 0.001200 | 0.003600 |

# 5.0 Energy Detail

Historical Energy Use: N

## 5.1 Mitigation Measures Energy

Exceed Title 24

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.1249 | 1.0673 | 0.4542 | 6.8100e-003 | | 0.0863 | 0.0863 | | 0.0863 | 0.0863 | | 1,362.4553 | 1,362.4553 | 0.0261 | 0.0250 | 1,370.5517 |
| NaturalGas Unmitigated | 0.1329 | 1.1354 | 0.4832 | 7.2500e-003 | | 0.0918 | 0.0918 | | 0.0918 | 0.0918 | | 1,449.4702 | 1,449.4702 | 0.0278 | 0.0266 | 1,458.0837 |

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| Single Family Housing | 12320.5 | 0.1329 | 1.1354 | 0.4832 | 7.2500e-003 | | 0.0918 | 0.0918 | | 0.0918 | 0.0918 | | 1,449.4702 | 1,449.4702 | 0.0278 | 0.0266 | 1,458.0837 |
| **Total** | | **0.1329** | **1.1354** | **0.4832** | **7.2500e-003** | | **0.0918** | **0.0918** | | **0.0918** | **0.0918** | | **1,449.4702** | **1,449.4702** | **0.0278** | **0.0266** | **1,458.0837** |

## 5.2 Energy by Land Use - NaturalGas

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| Single Family Housing | 11.5809 | 0.1249 | 1.0673 | 0.4542 | 6.8100e-003 | | 0.0863 | 0.0863 | | 0.0863 | 0.0863 | | 1,362.4553 | 1,362.4553 | 0.0261 | 0.0250 | 1,370.5517 |
| **Total** | | **0.1249** | **1.0673** | **0.4542** | **6.8100e-003** | | **0.0863** | **0.0863** | | **0.0863** | **0.0863** | | **1,362.4553** | **1,362.4553** | **0.0261** | **0.0250** | **1,370.5517** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 7.9224 | 1.7324 | 14.8205 | 0.0108 | | 0.2056 | 0.2056 | | 0.2056 | 0.2056 | 0.0000 | 2,028.8451 | 2,028.8451 | 0.0627 | 0.0367 | 2,041.3583 |
| Unmitigated | 24.2684 | 4.0204 | 155.0727 | 0.4684 | | 23.0852 | 23.0852 | | 23.0852 | 23.0852 | 3,377.0356 | 2,028.8451 | 5,405.8807 | 15.8497 | 0.0367 | 5,813.0677 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 1.5923 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 6.6254 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 15.6274 | 3.8572 | 140.9200 | 0.4676 | | 23.0065 | 23.0065 | | 23.0065 | 23.0065 | 3,377.0356 | 2,003.2941 | 5,380.3297 | 15.8254 | 0.0367 | 5,786.9082 |
| Landscaping | 0.4233 | 0.1632 | 14.1527 | 7.5000e-004 | | 0.0787 | 0.0787 | | 0.0787 | 0.0787 | | 25.5510 | 25.5510 | 0.0243 | | 26.1596 |
| **Total** | **24.2684** | **4.0204** | **155.0727** | **0.4684** | | **23.0852** | **23.0852** | | **23.0852** | **23.0852** | **3,377.0356** | **2,028.8451** | **5,405.8807** | **15.8497** | **0.0367** | **5,813.0677** |

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.6900 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 6.6254 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.1836 | 1.5693 | 0.6678 | 0.0100 | | 0.1269 | 0.1269 | | 0.1269 | 0.1269 | 0.0000 | 2,003.294 1 | 2,003.294 1 | 0.0384 | 0.0367 | 2,015.198 7 |
| Landscaping | 0.4233 | 0.1632 | 14.1527 | 7.5000e-004 | | 0.0787 | 0.0787 | | 0.0787 | 0.0787 | | 25.5510 | 25.5510 | 0.0243 | | 26.1596 |
| **Total** | **7.9224** | **1.7324** | **14.8205** | **0.0108** | | **0.2056** | **0.2056** | | **0.2056** | **0.2056** | **0.0000** | **2,028.845 1** | **2,028.845 1** | **0.0627** | **0.0367** | **2,041.358 3** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

# 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

### Fire Pumps and Emergency Generators

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

### Boilers

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

### User Defined Equipment

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

# CalEEMod Output

# Full Project Operations 2038

# (Summer Daily)

# Lacey Ranch Master Plan Buildout Ops Only

**Kings County, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| City Park | 7.90 | Acre | 7.90 | 344,124.00 | 0 |
| Apartments Low Rise | 204.00 | Dwelling Unit | 12.14 | 204,000.00 | 583 |
| Single Family Housing | 547.00 | Dwelling Unit | 139.96 | 984,600.00 | 1564 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 37 |
| **Climate Zone** | 3 | | | **Operational Year** | 2035 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 290 | **CH4 Intensity (lb/MWhr)** | 0.022 | **N2O Intensity (lb/MWhr)** | 0.005 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E Intensity Factors

Land Use - Project acres

Construction Phase -

Architectural Coating - Rule 4601 Architectural Coatings compliance

Vehicle Trips - ITE 10th Ed Trip Gen SFR 9.44, 9.54, 8.55, Apt 7.32, 8.14, 6.28

Woodstoves - Rule 4901 Residential Woodburning hearths allowed 2 per acre

Area Coating - Rule 4601 Architectural Coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Architectural Coatings

Energy Mitigation - 2019 Title 24

Water Mitigation - CalGreen indoor water savings and MWELO outdoor savings

Waste Mitigation - Calrecycle 75% diversion mandate

Fleet Mix - SJVAPCD Residential Fleet Mix for 2038

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblArchitecturalCoating | EF_Residential_Exterior | 150.00 | 65.00 |
| tblArchitecturalCoating | EF_Residential_Interior | 150.00 | 65.00 |
| tblAreaMitigation | UseLowVOCPaintResidentialExteriorValue | 150 | 65 |
| tblAreaMitigation | UseLowVOCPaintResidentialInteriorValue | 150 | 65 |
| tblFleetMix | HHD | 0.16 | 0.02 |
| tblFleetMix | HHD | 0.16 | 0.02 |
| tblFleetMix | HHD | 0.16 | 0.02 |
| tblFleetMix | LDA | 0.53 | 0.49 |
| tblFleetMix | LDA | 0.53 | 0.49 |
| tblFleetMix | LDA | 0.53 | 0.49 |
| tblFleetMix | LDT1 | 0.03 | 0.23 |

| | | | |
|---|---|---|---|
| tblFleetMix | LDT1 | 0.03 | 0.23 |
| tblFleetMix | LDT1 | 0.03 | 0.23 |
| tblFleetMix | LDT2 | 0.16 | 0.17 |
| tblFleetMix | LDT2 | 0.16 | 0.17 |
| tblFleetMix | LDT2 | 0.16 | 0.17 |
| tblFleetMix | LHD1 | 8.9300e-003 | 9.0000e-004 |
| tblFleetMix | LHD1 | 8.9300e-003 | 9.0000e-004 |
| tblFleetMix | LHD1 | 8.9300e-003 | 9.0000e-004 |
| tblFleetMix | LHD2 | 3.3870e-003 | 1.0000e-003 |
| tblFleetMix | LHD2 | 3.3870e-003 | 1.0000e-003 |
| tblFleetMix | LHD2 | 3.3870e-003 | 1.0000e-003 |
| tblFleetMix | MCY | 4.9760e-003 | 3.1000e-003 |
| tblFleetMix | MCY | 4.9760e-003 | 3.1000e-003 |
| tblFleetMix | MCY | 4.9760e-003 | 3.1000e-003 |
| tblFleetMix | MDV | 0.09 | 0.06 |
| tblFleetMix | MDV | 0.09 | 0.06 |
| tblFleetMix | MDV | 0.09 | 0.06 |
| tblFleetMix | MH | 4.3700e-004 | 4.1000e-003 |
| tblFleetMix | MH | 4.3700e-004 | 4.1000e-003 |
| tblFleetMix | MH | 4.3700e-004 | 4.1000e-003 |
| tblFleetMix | MHD | 0.01 | 7.8000e-003 |
| tblFleetMix | MHD | 0.01 | 7.8000e-003 |
| tblFleetMix | MHD | 0.01 | 7.8000e-003 |
| tblFleetMix | OBUS | 1.6060e-003 | 0.00 |
| tblFleetMix | OBUS | 1.6060e-003 | 0.00 |
| tblFleetMix | OBUS | 1.6060e-003 | 0.00 |
| tblFleetMix | SBUS | 7.7700e-004 | 1.1000e-003 |

| | | | |
|---|---|---|---|
| tblFleetMix | SBUS | 7.7700e-004 | 1.1000e-003 |
| tblFleetMix | SBUS | 7.7700e-004 | 1.1000e-003 |
| tblFleetMix | UBUS | 1.2420e-003 | 4.4000e-003 |
| tblFleetMix | UBUS | 1.2420e-003 | 4.4000e-003 |
| tblFleetMix | UBUS | 1.2420e-003 | 4.4000e-003 |
| tblLandUse | LotAcreage | 12.75 | 12.14 |
| tblLandUse | LotAcreage | 177.60 | 139.96 |
| tblProjectCharacteristics | CH4IntensityFactor | 0.029 | 0.022 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35 | 290 |
| tblProjectCharacteristics | N2OIntensityFactor | 0.006 | 0.005 |
| tblVehicleTrips | ST_TR | 7.16 | 8.14 |
| tblVehicleTrips | ST_TR | 9.91 | 9.54 |
| tblVehicleTrips | SU_TR | 6.07 | 8.28 |
| tblVehicleTrips | SU_TR | 8.62 | 8.55 |
| tblVehicleTrips | WD_TR | 6.59 | 7.32 |
| tblVehicleTrips | WD_TR | 9.52 | 9.44 |

## 2.0 Emissions Summary

## 2.1 Overall Construction (Maximum Daily Emission)

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2040 | 44.1967 | 0.7859 | 2.8085 | 8.0300e-003 | 0.8051 | 9.3600e-003 | 0.8144 | 0.2135 | 9.2000e-003 | 0.2227 | 0.0000 | 787.1010 | 787.1010 | 0.0147 | 0.0000 | 787.4673 |
| 2041 | 44.1967 | 0.7859 | 2.8085 | 8.0300e-003 | 0.8051 | 9.3600e-003 | 0.8144 | 0.2135 | 9.2000e-003 | 0.2227 | 0.0000 | 787.1010 | 787.1010 | 0.0147 | 0.0000 | 787.4673 |
| **Maximum** | **44.1967** | **0.7859** | **2.8085** | **8.0300e-003** | **0.8051** | **9.3600e-003** | **0.8144** | **0.2135** | **9.2000e-003** | **0.2227** | **0.0000** | **787.1010** | **787.1010** | **0.0147** | **0.0000** | **787.4673** |

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2040 | 44.1967 | 0.7859 | 2.8085 | 8.0300e-003 | 0.8051 | 9.3600e-003 | 0.8144 | 0.2135 | 9.2000e-003 | 0.2227 | 0.0000 | 787.1010 | 787.1010 | 0.0147 | 0.0000 | 787.4673 |
| 2041 | 44.1967 | 0.7859 | 2.8085 | 8.0300e-003 | 0.8051 | 9.3600e-003 | 0.8144 | 0.2135 | 9.2000e-003 | 0.2227 | 0.0000 | 787.1010 | 787.1010 | 0.0147 | 0.0000 | 787.4673 |
| **Maximum** | **44.1967** | **0.7859** | **2.8085** | **8.0300e-003** | **0.8051** | **9.3600e-003** | **0.8144** | **0.2135** | **9.2000e-003** | **0.2227** | **0.0000** | **787.1010** | **787.1010** | **0.0147** | **0.0000** | **787.4673** |

| | **ROG** | **NOx** | **CO** | **SO2** | **Fugitive PM10** | **Exhaust PM10** | **PM10 Total** | **Fugitive PM2.5** | **Exhaust PM2.5** | **PM2.5 Total** | **Bio- CO2** | **NBio-CO2** | **Total CO2** | **CH4** | **N20** | **CO2e** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 2.2 Overall Operational

**Unmitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 109.8230 | 18.7646 | 751.2475 | 2.2871 | | 112.9025 | 112.9025 | | 112.9025 | 112.9025 | 16,531.9315 | 8,858.5057 | 25,390.4372 | 77.5573 | 0.1604 | 27,377.1565 |
| Energy | 0.5078 | 4.3390 | 1.8464 | 0.0277 | | 0.3508 | 0.3508 | | 0.3508 | 0.3508 | | 5,539.1730 | 5,539.1730 | 0.1062 | 0.1016 | 5,572.0895 |
| Mobile | 6.9387 | 24.5822 | 76.3235 | 0.3505 | 42.6649 | 0.1666 | 42.8315 | 11.3940 | 0.1545 | 11.5485 | | 35,672.3667 | 35,672.3667 | 1.5500 | | 35,711.1155 |
| **Total** | **117.2694** | **47.6858** | **829.4174** | **2.6653** | **42.6649** | **113.4200** | **156.0849** | **11.3940** | **113.4078** | **124.8018** | **16,531.9315** | **50,070.0454** | **66,601.9769** | **79.2134** | **0.2619** | **68,660.3616** |

**Mitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 30.7556 | 7.5641 | 64.6571 | 0.0470 | | 0.8976 | 0.8976 | | 0.8976 | 0.8976 | 0.0000 | 8,858.5057 | 8,858.5057 | 0.2739 | 0.1604 | 8,913.1395 |
| Energy | 0.4780 | 4.0847 | 1.7382 | 0.0261 | | 0.3303 | 0.3303 | | 0.3303 | 0.3303 | | 5,214.5149 | 5,214.5149 | 0.0999 | 0.0956 | 5,245.5021 |
| Mobile | 6.8078 | 23.9301 | 71.7857 | 0.3281 | 39.7210 | 0.1568 | 39.8778 | 10.6078 | 0.1453 | 10.7531 | | 33,395.5736 | 33,395.5736 | 1.4906 | | 33,432.8396 |
| **Total** | **38.0414** | **35.5789** | **138.1810** | **0.4012** | **39.7210** | **1.3846** | **41.1056** | **10.6078** | **1.3732** | **11.9809** | **0.0000** | **47,468.5942** | **47,468.5942** | **1.8644** | **0.2560** | **47,591.4812** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | 67.56 | 25.39 | 83.34 | 84.95 | 6.90 | 98.78 | 73.66 | 6.90 | 98.79 | 90.40 | 100.00 | 5.20 | 28.73 | 97.65 | 2.27 | 30.69 |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Architectural Coating | Architectural Coating | 5/17/2040 | 3/20/2041 | 5 | 220 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0**

**Residential Indoor: 2,406,915; Residential Outdoor: 802,305; Non-Residential Indoor: 300; Non-Residential Outdoor: 100; Striped Parking Area: 0 (Architectural Coating – sqft)**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

### Trips and VMT

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Architectural Coating | 1 | 98.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

## 3.2 Architectural Coating - 2040

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 43.9607 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1149 | 0.7270 | 1.7923 | 2.9700e-003 | | 7.4300e-003 | 7.4300e-003 | | 7.4300e-003 | 7.4300e-003 | | 281.4481 | 281.4481 | 9.9000e-003 | | 281.6957 |
| **Total** | **44.0756** | **0.7270** | **1.7923** | **2.9700e-003** | | **7.4300e-003** | **7.4300e-003** | | **7.4300e-003** | **7.4300e-003** | | **281.4481** | **281.4481** | **9.9000e-003** | | **281.6957** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.1211 | 0.0589 | 1.0162 | 5.0600e-003 | 0.8051 | 1.9300e-003 | 0.8070 | 0.2135 | 1.7700e-003 | 0.2153 | | 505.6529 | 505.6529 | 4.7500e-003 | | 505.7717 |
| **Total** | **0.1211** | **0.0589** | **1.0162** | **5.0600e-003** | **0.8051** | **1.9300e-003** | **0.8070** | **0.2135** | **1.7700e-003** | **0.2153** | | **505.6529** | **505.6529** | **4.7500e-003** | | **505.7717** |

## 3.2 Architectural Coating - 2040

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 43.9607 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1149 | 0.7270 | 1.7923 | 2.9700e-003 | | 7.4300e-003 | 7.4300e-003 | | 7.4300e-003 | 7.4300e-003 | 0.0000 | 281.4481 | 281.4481 | 9.9000e-003 | | 281.6957 |
| **Total** | **44.0756** | **0.7270** | **1.7923** | **2.9700e-003** | | **7.4300e-003** | **7.4300e-003** | | **7.4300e-003** | **7.4300e-003** | **0.0000** | **281.4481** | **281.4481** | **9.9000e-003** | | **281.6957** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.1211 | 0.0589 | 1.0162 | 5.0600e-003 | 0.8051 | 1.9300e-003 | 0.8070 | 0.2135 | 1.7700e-003 | 0.2153 | | 505.6529 | 505.6529 | 4.7500e-003 | | 505.7717 |
| **Total** | **0.1211** | **0.0589** | **1.0162** | **5.0600e-003** | **0.8051** | **1.9300e-003** | **0.8070** | **0.2135** | **1.7700e-003** | **0.2153** | | **505.6529** | **505.6529** | **4.7500e-003** | | **505.7717** |

## 3.2 Architectural Coating - 2041

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 43.9607 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1149 | 0.7270 | 1.7923 | 2.9700e-003 | | 7.4300e-003 | 7.4300e-003 | | 7.4300e-003 | 7.4300e-003 | | 281.4481 | 281.4481 | 9.9000e-003 | | 281.6957 |
| **Total** | **44.0756** | **0.7270** | **1.7923** | **2.9700e-003** | | **7.4300e-003** | **7.4300e-003** | | **7.4300e-003** | **7.4300e-003** | | **281.4481** | **281.4481** | **9.9000e-003** | | **281.6957** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.1211 | 0.0589 | 1.0162 | 5.0600e-003 | 0.8051 | 1.9300e-003 | 0.8070 | 0.2135 | 1.7700e-003 | 0.2153 | | 505.6529 | 505.6529 | 4.7500e-003 | | 505.7717 |
| **Total** | **0.1211** | **0.0589** | **1.0162** | **5.0600e-003** | **0.8051** | **1.9300e-003** | **0.8070** | **0.2135** | **1.7700e-003** | **0.2153** | | **505.6529** | **505.6529** | **4.7500e-003** | | **505.7717** |

## 3.2 Architectural Coating - 2041

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Archit. Coating | 43.9607 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Off-Road | 0.1149 | 0.7270 | 1.7923 | 2.9700e-003 | | 7.4300e-003 | 7.4300e-003 | | 7.4300e-003 | 7.4300e-003 | 0.0000 | 281.4481 | 281.4481 | 9.9000e-003 | | 281.6957 |
| **Total** | **44.0756** | **0.7270** | **1.7923** | **2.9700e-003** | | **7.4300e-003** | **7.4300e-003** | | **7.4300e-003** | **7.4300e-003** | **0.0000** | **281.4481** | **281.4481** | **9.9000e-003** | | **281.6957** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.1211 | 0.0589 | 1.0162 | 5.0600e-003 | 0.8051 | 1.9300e-003 | 0.8070 | 0.2135 | 1.7700e-003 | 0.2153 | | 505.6529 | 505.6529 | 4.7500e-003 | | 505.7717 |
| **Total** | **0.1211** | **0.0589** | **1.0162** | **5.0600e-003** | **0.8051** | **1.9300e-003** | **0.8070** | **0.2135** | **1.7700e-003** | **0.2153** | | **505.6529** | **505.6529** | **4.7500e-003** | | **505.7717** |

## 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 6.8078 | 23.9301 | 71.7857 | 0.3281 | 39.7210 | 0.1568 | 39.8778 | 10.6078 | 0.1453 | 10.7531 | | 33,395.5736 | 33,395.5736 | 1.4906 | | 33,432.8396 |
| Unmitigated | 6.9387 | 24.5822 | 76.3235 | 0.3505 | 42.6649 | 0.1666 | 42.8315 | 11.3940 | 0.1545 | 11.5485 | | 35,672.3667 | 35,672.3667 | 1.5500 | | 35,711.1155 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Apartments Low Rise | 1,493.28 | 1,660.56 | 1689.12 | 4,422,616 | 4,117,456 |
| City Park | 14.93 | 179.73 | 132.25 | 117,913 | 109,777 |
| Single Family Housing | 5,163.68 | 5,218.38 | 4676.85 | 14,603,043 | 13,595,433 |
| Total | 6,671.89 | 7,058.67 | 6,498.22 | 19,143,572 | 17,822,665 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Apartments Low Rise | 10.80 | 7.30 | 7.50 | 42.30 | 19.60 | 38.10 | 86 | 11 | 3 |
| City Park | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 66 | 28 | 6 |
| Single Family Housing | 10.80 | 7.30 | 7.50 | 42.30 | 19.60 | 38.10 | 86 | 11 | 3 |

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Low Rise | 0.488300 | 0.234800 | 0.171200 | 0.060200 | 0.000900 | 0.001000 | 0.007800 | 0.021300 | 0.000000 | 0.004400 | 0.003100 | 0.001100 | 0.004100 |
| City Park | 0.488300 | 0.234800 | 0.171200 | 0.060200 | 0.000900 | 0.001000 | 0.007800 | 0.021300 | 0.000000 | 0.004400 | 0.003100 | 0.001100 | 0.004100 |
| Single Family Housing | 0.488300 | 0.234800 | 0.171200 | 0.060200 | 0.000900 | 0.001000 | 0.007800 | 0.021300 | 0.000000 | 0.004400 | 0.003100 | 0.001100 | 0.004100 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

Exceed Title 24

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.4780 | 4.0847 | 1.7382 | 0.0261 | | 0.3303 | 0.3303 | | 0.3303 | 0.3303 | | 5,214.514 9 | 5,214.514 9 | 0.0999 | 0.0956 | 5,245.502 1 |
| NaturalGas Unmitigated | 0.5078 | 4.3390 | 1.8464 | 0.0277 | | 0.3508 | 0.3508 | | 0.3508 | 0.3508 | | 5,539.173 0 | 5,539.173 0 | 0.1062 | 0.1016 | 5,572.089 5 |

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| Apartments Low Rise | 7900.93 | 0.0852 | 0.7281 | 0.3098 | 4.6500e-003 | | 0.0589 | 0.0589 | | 0.0589 | 0.0589 | | 929.5207 | 929.5207 | 0.0178 | 0.0170 | 935.0443 |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 39182 | 0.4226 | 3.6109 | 1.5366 | 0.0231 | | 0.2919 | 0.2919 | | 0.2919 | 0.2919 | | 4,609.652 3 | 4,609.652 3 | 0.0884 | 0.0845 | 4,637.045 2 |
| **Total** | | **0.5078** | **4.3390** | **1.8464** | **0.0277** | | **0.3508** | **0.3508** | | **0.3508** | **0.3508** | | **5,539.173 0** | **5,539.173 0** | **0.1062** | **0.1016** | **5,572.089 5** |

## 5.2 Energy by Land Use - NaturalGas

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| Apartments Low Rise | 7.49352 | 0.0808 | 0.6906 | 0.2939 | 4.4100e-003 | | 0.0558 | 0.0558 | | 0.0558 | 0.0558 | | 881.5902 | 881.5902 | 0.0169 | 0.0162 | 886.8291 |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 36.8299 | 0.3972 | 3.3941 | 1.4443 | 0.0217 | | 0.2744 | 0.2744 | | 0.2744 | 0.2744 | | 4,332.9246 | 4,332.9246 | 0.0831 | 0.0794 | 4,358.6731 |
| **Total** | | **0.4780** | **4.0847** | **1.7382** | **0.0261** | | **0.3303** | **0.3303** | | **0.3303** | **0.3303** | | **5,214.5149** | **5,214.5149** | **0.1000** | **0.0956** | **5,245.5021** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 30.7556 | 7.5641 | 64.6571 | 0.0470 | | 0.8976 | 0.8976 | | 0.8976 | 0.8976 | 0.0000 | 8,858.5057 | 8,858.5057 | 0.2739 | 0.1604 | 8,913.1395 |
| Unmitigated | 109.8230 | 18.7646 | 751.2475 | 2.2871 | | 112.9025 | 112.9025 | | 112.9025 | 112.9025 | 16,531.9315 | 8,858.5057 | 25,390.4372 | 77.5573 | 0.1604 | 27,377.1565 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 6.1137 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 25.4580 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 76.4052 | 18.0523 | 689.5060 | 2.2838 | | 112.5589 | 112.5589 | | 112.5589 | 112.5589 | 16,531.9315 | 8,746.9412 | 25,278.8727 | 77.4511 | 0.1604 | 27,262.9369 |
| Landscaping | 1.8461 | 0.7123 | 61.7415 | 3.2700e-003 | | 0.3436 | 0.3436 | | 0.3436 | 0.3436 | | 111.5645 | 111.5645 | 0.1062 | | 114.2197 |
| **Total** | **109.8230** | **18.7646** | **751.2475** | **2.2871** | | **112.9025** | **112.9025** | | **112.9025** | **112.9025** | **16,531.9315** | **8,858.5057** | **25,390.4372** | **77.5573** | **0.1604** | **27,377.1565** |

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 2.6497 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 25.4580 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Hearth | 0.8018 | 6.8518 | 2.9157 | 0.0437 | | 0.5540 | 0.5540 | | 0.5540 | 0.5540 | 0.0000 | 8,746.9412 | 8,746.9412 | 0.1677 | 0.1604 | 8,798.9199 |
| Landscaping | 1.8461 | 0.7123 | 61.7415 | 3.2700e-003 | | 0.3436 | 0.3436 | | 0.3436 | 0.3436 | | 111.5645 | 111.5645 | 0.1062 | | 114.2197 |
| **Total** | **30.7556** | **7.5641** | **64.6571** | **0.0470** | | **0.8976** | **0.8976** | | **0.8976** | **0.8976** | **0.0000** | **8,858.5057** | **8,858.5057** | **0.2739** | **0.1604** | **8,913.1395** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

# 8.0 Waste Detail

## 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

# 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

### Fire Pumps and Emergency Generators

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

### Boilers

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

### User Defined Equipment

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

# CalEEMod Output

# GHG Business as Usual

# Lacey Ranch Master Plan Buildout Ops BAU

**Kings County, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| City Park | 7.90 | Acre | 7.90 | 344,124.00 | 0 |
| Apartments Low Rise | 204.00 | Dwelling Unit | 12.14 | 204,000.00 | 583 |
| Single Family Housing | 547.00 | Dwelling Unit | 139.96 | 984,600.00 | 1564 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Urban | **Wind Speed (m/s)** | 2.2 | **Precipitation Freq (Days)** | 37 |
| **Climate Zone** | 3 | | | **Operational Year** | 2005 |
| **Utility Company** | Pacific Gas & Electric Company | | | | |
| **CO2 Intensity (lb/MWhr)** | 641.35 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Lacey Ranch Master Plan Buildout Ops BAU - Kings County, Annual

Project Characteristics - PG&E Intensity Factors

Land Use - Project acres

Construction Phase -

Architectural Coating - Rule 4601 Architectural Coatings compliance

Vehicle Trips - ITE 10th Ed Trip Gen SFR 9.44, 9.54, 8.55, Apt 7.32, 8.14, 6.28

Woodstoves - Rule 4901 Residential Woodburning hearths allowed 2 per acre

Area Coating - Rule 4601 Architectural Coatings

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation - Rule 4601 Architectural Coatings

Energy Mitigation - 2019 Title 24

Water Mitigation - CalGreen indoor water savings and MWELO outdoor savings

Waste Mitigation - Calrecycle 75% diversion mandate

Fleet Mix - SJVAPCD Residential Fleet Mix for 2038

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaMitigation | UseLowVOCPaintResidentialExteriorValue | 250 | 65 |
| tblAreaMitigation | UseLowVOCPaintResidentialInteriorValue | 250 | 65 |
| tblFleetMix | HHD | 0.15 | 0.02 |
| tblFleetMix | HHD | 0.15 | 0.02 |
| tblFleetMix | HHD | 0.15 | 0.02 |
| tblFleetMix | LDA | 0.40 | 0.49 |
| tblFleetMix | LDA | 0.40 | 0.49 |
| tblFleetMix | LDA | 0.40 | 0.49 |
| tblFleetMix | LDT1 | 0.05 | 0.23 |
| tblFleetMix | LDT1 | 0.05 | 0.23 |
| tblFleetMix | LDT1 | 0.05 | 0.23 |

| | | | |
|---|---|---|---|
| tblFleetMix | LDT2 | 0.13 | 0.17 |
| tblFleetMix | LDT2 | 0.13 | 0.17 |
| tblFleetMix | LDT2 | 0.13 | 0.17 |
| tblFleetMix | LHD1 | 0.04 | 9.0000e-004 |
| tblFleetMix | LHD1 | 0.04 | 9.0000e-004 |
| tblFleetMix | LHD1 | 0.04 | 9.0000e-004 |
| tblFleetMix | LHD2 | 5.6710e-003 | 1.0000e-003 |
| tblFleetMix | LHD2 | 5.6710e-003 | 1.0000e-003 |
| tblFleetMix | LHD2 | 5.6710e-003 | 1.0000e-003 |
| tblFleetMix | MCY | 5.8480e-003 | 3.1000e-003 |
| tblFleetMix | MCY | 5.8480e-003 | 3.1000e-003 |
| tblFleetMix | MCY | 5.8480e-003 | 3.1000e-003 |
| tblFleetMix | MDV | 0.18 | 0.06 |
| tblFleetMix | MDV | 0.18 | 0.06 |
| tblFleetMix | MDV | 0.18 | 0.06 |
| tblFleetMix | MH | 1.7580e-003 | 4.1000e-003 |
| tblFleetMix | MH | 1.7580e-003 | 4.1000e-003 |
| tblFleetMix | MH | 1.7580e-003 | 4.1000e-003 |
| tblFleetMix | MHD | 0.01 | 7.8000e-003 |
| tblFleetMix | MHD | 0.01 | 7.8000e-003 |
| tblFleetMix | MHD | 0.01 | 7.8000e-003 |
| tblFleetMix | OBUS | 1.3310e-003 | 0.00 |
| tblFleetMix | OBUS | 1.3310e-003 | 0.00 |
| tblFleetMix | OBUS | 1.3310e-003 | 0.00 |
| tblFleetMix | SBUS | 1.2270e-003 | 1.1000e-003 |
| tblFleetMix | SBUS | 1.2270e-003 | 1.1000e-003 |
| tblFleetMix | SBUS | 1.2270e-003 | 1.1000e-003 |

| | | | |
|---|---|---|---|
| tblFleetMix | UBUS | 2.7580e-003 | 4.4000e-003 |
| tblFleetMix | UBUS | 2.7580e-003 | 4.4000e-003 |
| tblFleetMix | UBUS | 2.7580e-003 | 4.4000e-003 |
| tblLandUse | LotAcreage | 12.75 | 12.14 |
| tblLandUse | LotAcreage | 177.60 | 139.96 |
| tblVehicleTrips | ST_TR | 7.16 | 8.14 |
| tblVehicleTrips | ST_TR | 9.91 | 9.54 |
| tblVehicleTrips | SU_TR | 6.07 | 8.28 |
| tblVehicleTrips | SU_TR | 8.62 | 8.55 |
| tblVehicleTrips | WD_TR | 6.59 | 7.32 |
| tblVehicleTrips | WD_TR | 9.52 | 9.44 |

## 2.0 Emissions Summary

## 2.1 Overall Construction

**Unmitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2040 | | | | | | | | | | | 0.0000 | 54.8859 | 54.8859 | 1.0400e-003 | 0.0000 | 54.9119 |
| 2041 | | | | | | | | | | | 0.0000 | 19.1932 | 19.1932 | 3.6000e-004 | 0.0000 | 19.2023 |
| **Maximum** | | | | | | | | | | | **0.0000** | **54.8859** | **54.8859** | **1.0400e-003** | **0.0000** | **54.9119** |

**Mitigated Construction**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2040 | | | | | | | | | | | 0.0000 | 54.8859 | 54.8859 | 1.0400e-003 | 0.0000 | 54.9119 |
| 2041 | | | | | | | | | | | 0.0000 | 19.1932 | 19.1932 | 3.6000e-004 | 0.0000 | 19.2023 |
| **Maximum** | | | | | | | | | | | **0.0000** | **54.8859** | **54.8859** | **1.0400e-003** | **0.0000** | **54.9119** |

| | **ROG** | **NOx** | **CO** | **SO2** | **Fugitive PM10** | **Exhaust PM10** | **PM10 Total** | **Fugitive PM2.5** | **Exhaust PM2.5** | **PM2.5 Total** | **Bio- CO2** | **NBio-CO2** | **Total CO2** | **CH4** | **N20** | **CO2e** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| | | **Highest** | | |

## 2.2 Overall Operational

**Unmitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | | | | | | | | | | | 614.8982 | 334.4476 | 949.3458 | 2.8954 | 5.9600e-003 | 1,023.5069 |
| Energy | | | | | | | | | | | 0.0000 | 2,588.7481 | 2,588.7481 | 0.0932 | 0.0325 | 2,600.7479 |
| Mobile | | | | | | | | | | | 0.0000 | 8,741.8863 | 8,741.8863 | 2.0408 | 0.0000 | 8,792.9056 |
| Waste | | | | | | | | | | | 133.4787 | 0.0000 | 133.4787 | 7.8884 | 0.0000 | 330.6879 |
| Water | | | | | | | | | | | 15.5235 | 118.0155 | 133.5389 | 1.5997 | 0.0388 | 185.0804 |
| **Total** | | | | | | | | | | | **763.9004** | **11,783.0975** | **12,546.9978** | **14.5174** | **0.0772** | **12,932.9287** |

## 2.2 Overall Operational

**Mitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | | | | | | | | | | | 0.0000 | 334.4476 | 334.4476 | 0.0208 | 5.9600e-003 | 336.7456 |
| Energy | | | | | | | | | | | 0.0000 | 2,521.0189 | 2,521.0189 | 0.0915 | 0.0313 | 2,532.6446 |
| Mobile | | | | | | | | | | | 0.0000 | 8,174.0071 | 8,174.0071 | 1.9553 | 0.0000 | 8,222.8899 |
| Waste | | | | | | | | | | | 100.1091 | 0.0000 | 100.1091 | 5.9163 | 0.0000 | 248.0159 |
| Water | | | | | | | | | | | 12.4188 | 94.4124 | 106.8312 | 1.2798 | 0.0310 | 148.0644 |
| **Total** | | | | | | | | | | | **112.5278** | **11,123.8861** | **11,236.4139** | **9.2637** | **0.0683** | **11,488.3604** |

| | **ROG** | **NOx** | **CO** | **SO2** | **Fugitive PM10** | **Exhaust PM10** | **PM10 Total** | **Fugitive PM2.5** | **Exhaust PM2.5** | **PM2.5 Total** | **Bio- CO2** | **NBio-CO2** | **Total CO2** | **CH4** | **N20** | **CO2e** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **85.27** | **5.59** | **10.45** | **36.19** | **11.48** | **11.17** |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Architectural Coating | Architectural Coating | 5/17/2040 | 3/20/2041 | 5 | 220 | |

### Acres of Grading (Site Preparation Phase): 0

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0**

**Residential Indoor: 2,406,915; Residential Outdoor: 802,305; Non-Residential Indoor: 300; Non-Residential Outdoor: 100; Striped Parking Area: 0 (Architectural Coating – sqft)**

**<u>OffRoad Equipment</u>**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Architectural Coating | Air Compressors | 1 | 6.00 | 78 | 0.48 |

**<u>Trips and VMT</u>**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Architectural Coating | 1 | 98.00 | 0.00 | 0.00 | 10.80 | 7.30 | 20.00 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

Water Exposed Area

## 3.2 Architectural Coating - 2040

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | | | | | | | | | | | 0.0000 | 20.8090 | 20.8090 | 7.3000e-004 | 0.0000 | 20.8273 |
| **Total** | | | | | | | | | | | **0.0000** | **20.8090** | **20.8090** | **7.3000e-004** | **0.0000** | **20.8273** |

**Unmitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | | | | | | | | | | | 0.0000 | 34.0769 | 34.0769 | 3.1000e-004 | 0.0000 | 34.0846 |
| **Total** | | | | | | | | | | | **0.0000** | **34.0769** | **34.0769** | **3.1000e-004** | **0.0000** | **34.0846** |

## 3.2 Architectural Coating - 2040

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | | | | | | | | | | | 0.0000 | 20.8090 | 20.8090 | 7.3000e-004 | 0.0000 | 20.8273 |
| **Total** | | | | | | | | | | | **0.0000** | **20.8090** | **20.8090** | **7.3000e-004** | **0.0000** | **20.8273** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | | | | | | | | | | | 0.0000 | 34.0769 | 34.0769 | 3.1000e-004 | 0.0000 | 34.0846 |
| **Total** | | | | | | | | | | | **0.0000** | **34.0769** | **34.0769** | **3.1000e-004** | **0.0000** | **34.0846** |

## 3.2 Architectural Coating - 2041

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | | | | | | | | | | | 0.0000 | 7.2768 | 7.2768 | 2.6000e-004 | 0.0000 | 7.2832 |
| **Total** | | | | | | | | | | | **0.0000** | **7.2768** | **7.2768** | **2.6000e-004** | **0.0000** | **7.2832** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | | | | | | | | | | | 0.0000 | 11.9165 | 11.9165 | 1.1000e-004 | 0.0000 | 11.9192 |
| **Total** | | | | | | | | | | | **0.0000** | **11.9165** | **11.9165** | **1.1000e-004** | **0.0000** | **11.9192** |

## 3.2 Architectural Coating - 2041

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Archit. Coating | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | | | | | | | | | | | 0.0000 | 7.2768 | 7.2768 | 2.6000e-004 | 0.0000 | 7.2832 |
| **Total** | | | | | | | | | | | **0.0000** | **7.2768** | **7.2768** | **2.6000e-004** | **0.0000** | **7.2832** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Vendor | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | | | | | | | | | | | 0.0000 | 11.9165 | 11.9165 | 1.1000e-004 | 0.0000 | 11.9192 |
| **Total** | | | | | | | | | | | **0.0000** | **11.9165** | **11.9165** | **1.1000e-004** | **0.0000** | **11.9192** |

## 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | | | | | | | | | | | 0.0000 | 8,174.0071 | 8,174.0071 | 1.9553 | 0.0000 | 8,222.8899 |
| Unmitigated | | | | | | | | | | | 0.0000 | 8,741.8863 | 8,741.8863 | 2.0408 | 0.0000 | 8,792.9056 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| Apartments Low Rise | 1,493.28 | 1,660.56 | 1689.12 | 4,422,616 | 4,117,456 |
| City Park | 14.93 | 179.73 | 132.25 | 117,913 | 109,777 |
| Single Family Housing | 5,163.68 | 5,218.38 | 4676.85 | 14,603,043 | 13,595,433 |
| Total | 6,671.89 | 7,058.67 | 6,498.22 | 19,143,572 | 17,822,665 |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| Apartments Low Rise | 10.80 | 7.30 | 7.50 | 42.30 | 19.60 | 38.10 | 86 | 11 | 3 |
| City Park | 9.50 | 7.30 | 7.30 | 33.00 | 48.00 | 19.00 | 66 | 28 | 6 |
| Single Family Housing | 10.80 | 7.30 | 7.50 | 42.30 | 19.60 | 38.10 | 86 | 11 | 3 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Apartments Low Rise | 0.488300 | 0.234800 | 0.171200 | 0.060200 | 0.000900 | 0.001000 | 0.007800 | 0.021300 | 0.000000 | 0.004400 | 0.003100 | 0.001100 | 0.004100 |
| City Park | 0.488300 | 0.234800 | 0.171200 | 0.060200 | 0.000900 | 0.001000 | 0.007800 | 0.021300 | 0.000000 | 0.004400 | 0.003100 | 0.001100 | 0.004100 |
| Single Family Housing | 0.488300 | 0.234800 | 0.171200 | 0.060200 | 0.000900 | 0.001000 | 0.007800 | 0.021300 | 0.000000 | 0.004400 | 0.003100 | 0.001100 | 0.004100 |

# 5.0 Energy Detail

Historical Energy Use: N

## 5.1 Mitigation Measures Energy

Exceed Title 24

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Electricity Mitigated | | | | | | | | | | | 0.0000 | 1,657.6975 | 1,657.6975 | 0.0750 | 0.0155 | 1,664.1929 |
| Electricity Unmitigated | | | | | | | | | | | 0.0000 | 1,671.6759 | 1,671.6759 | 0.0756 | 0.0156 | 1,678.2260 |
| NaturalGas Mitigated | | | | | | | | | | | 0.0000 | 863.3214 | 863.3214 | 0.0166 | 0.0158 | 868.4517 |
| NaturalGas Unmitigated | | | | | | | | | | | 0.0000 | 917.0722 | 917.0722 | 0.0176 | 0.0168 | 922.5219 |

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Apartments Low Rise | 2.88384e+006 | | | | | | | | | | | 0.0000 | 153.8926 | 153.8926 | 2.9500e-003 | 2.8200e-003 | 154.8071 |
| City Park | 0 | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 1.43014e+007 | | | | | | | | | | | 0.0000 | 763.1796 | 763.1796 | 0.0146 | 0.0140 | 767.7148 |
| **Total** | | | | | | | | | | | | **0.0000** | **917.0722** | **917.0722** | **0.0176** | **0.0168** | **922.5219** |

## 5.2 Energy by Land Use - NaturalGas

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Apartments Low Rise | 2.73513e +006 | | | | | | | | | | | 0.0000 | 145.9572 | 145.9572 | 2.8000e-003 | 2.6800e-003 | 146.8245 |
| City Park | 0 | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 1.34429e +007 | | | | | | | | | | | 0.0000 | 717.3643 | 717.3643 | 0.0138 | 0.0132 | 721.6272 |
| **Total** | | | | | | | | | | | | **0.0000** | **863.3214** | **863.3214** | **0.0166** | **0.0158** | **868.4517** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Apartments Low Rise | 954214 | 277.5918 | 0.0126 | 2.6000e-003 | 278.6795 |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 4.79212e +006 | 1,394.0841 | 0.0630 | 0.0130 | 1,399.5465 |
| **Total** | | **1,671.6759** | **0.0756** | **0.0156** | **1,678.2260** |

## 5.3 Energy by Land Use - Electricity

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| Apartments Low Rise | 944298 | 274.7071 | 0.0124 | 2.5700e-003 | 275.7835 |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Single Family Housing | 4.75399e+006 | 1,382.9904 | 0.0625 | 0.0129 | 1,388.4094 |
| **Total** | | **1,657.6975** | **0.0750** | **0.0155** | **1,664.1929** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use only Natural Gas Hearths

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | | | | | | | | | | | 0.0000 | 334.4476 | 334.4476 | 0.0208 | 5.9600e-003 | 336.7456 |
| Unmitigated | | | | | | | | | | | 614.8982 | 334.4476 | 949.3458 | 2.8954 | 5.9600e-003 | 1,023.5069 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | | | | | | | | | | | 614.8982 | 325.3388 | 940.2369 | 2.8808 | 5.9600e-003 | 1,014.0333 |
| Landscaping | | | | | | | | | | | 0.0000 | 9.1089 | 9.1089 | 0.0146 | 0.0000 | 9.4736 |
| **Total** | | | | | | | | | | | **614.8982** | **334.4476** | **949.3458** | **2.8954** | **5.9600e-003** | **1,023.5069** |

## 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | | | | | | | | | | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Hearth | | | | | | | | | | | 0.0000 | 325.3388 | 325.3388 | 6.2400e-003 | 5.9600e-003 | 327.2721 |
| Landscaping | | | | | | | | | | | 0.0000 | 9.1089 | 9.1089 | 0.0146 | 0.0000 | 9.4736 |
| **Total** | | | | | | | | | | | **0.0000** | **334.4476** | **334.4476** | **0.0208** | **5.9600e-003** | **336.7456** |

# 7.0 Water Detail

## 7.1 Mitigation Measures Water

Apply Water Conservation Strategy

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 106.8312 | 1.2798 | 0.0310 | 148.0644 |
| Unmitigated | 133.5389 | 1.5997 | 0.0388 | 185.0804 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Apartments Low Rise | 13.2914 / 8.37937 | 33.6709 | 0.4344 | 0.0105 | 47.6613 |
| City Park | 0 / 9.4127 | 9.5839 | 4.3000e-004 | 9.0000e-005 | 9.6215 |
| Single Family Housing | 35.6393 / 22.4682 | 90.2841 | 1.1649 | 0.0282 | 127.7977 |
| **Total** | | **133.5389** | **1.5997** | **0.0388** | **185.0804** |

### 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| Apartments Low Rise | 10.6331 / 6.7035 | 26.9367 | 0.3476 | 8.4000e-003 | 38.1290 |
| City Park | 0 / 7.53016 | 7.6671 | 3.5000e-004 | 7.0000e-005 | 7.6972 |
| Single Family Housing | 28.5114 / 17.9746 | 72.2273 | 0.9319 | 0.0225 | 102.2381 |
| **Total** | | **106.8312** | **1.2798** | **0.0310** | **148.0644** |

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 100.1091 | 5.9163 | 0.0000 | 248.0159 |
| Unmitigated | 133.4787 | 7.8884 | 0.0000 | 330.6879 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Apartments Low Rise | 93.84 | 19.0487 | 1.1257 | 0.0000 | 47.1923 |
| City Park | 0.68 | 0.1380 | 8.1600e-003 | 0.0000 | 0.3420 |
| Single Family Housing | 563.04 | 114.2920 | 6.7545 | 0.0000 | 283.1537 |
| **Total** | | **133.4787** | **7.8884** | **0.0000** | **330.6879** |

### 8.2 Waste by Land Use

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| Apartments Low Rise | 70.38 | 14.2865 | 0.8443 | 0.0000 | 35.3942 |
| City Park | 0.51 | 0.1035 | 6.1200e-003 | 0.0000 | 0.2565 |
| Single Family Housing | 422.28 | 85.7190 | 5.0659 | 0.0000 | 212.3653 |
| **Total** | | **100.1091** | **5.9163** | **0.0000** | **248.0159** |

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

# Appendix B: San Joaquin Valley Air Pollution Control District Amicus Brief on Friant Ranch Supreme Court Decision

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SUPREME COURT COPY

**CASE NO. S219783**

**IN THE SUPREME COURT OF CALIFORNIA**

SIERRA CLUB, REVIVE THE SAN JOAQUIN, and LEAGUE OF WOMEN VOTERS OF FRESNO,
*Plaintiffs and Appellants*

v.

COUNTY OF FRESNO,
*Defendant and Respondent*

FRIANT RANCH, L.P.,
*Real Party in Interest and Respondent*

SUPREME COURT
FILED

APR 13 2015

Frank A. McGuire Clerk

Deputy

After a Decision by the Court of Appeal, filed May 27, 2014
Fifth Appellate District Case No. F066798

Appeal from the Superior Court of California, County of Fresno
Case No. 11CECG00726

# APPLICATION FOR LEAVE TO FILE AMICUS CURIAE BRIEF OF SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT IN SUPPORT OF DEFENDANT AND RESPONDENT, COUNTY OF FRESNO AND REAL PARTY IN INTEREST AND RESPONDENT, FRIANT RANCH, L.P.

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**CASE NO. S219783**

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## APPLICATION

Pursuant to California Rules of Court 8.520(f)(1), proposed Amicus Curiae San Joaquin Valley Unified Air Pollution Control District hereby requests permission from the Chief Justice to file an amicus brief in support of Defendant and Respondent, County of Fresno, and Defendant and Real Parties in Interest Friant Ranch, L.P. Pursuant to Rule 8.520(f)(5) of the California Rules of Court, the proposed amicus curiae brief is combined with this Application. The brief addresses the following issue certified by this Court for review:

> Is an EIR adequate when it identifies the health impacts of air pollution and quantifies a project's expected emissions, or does CEQA further require the EIR to *correlate* a project's air quality emissions to specific health impacts?

As of the date of this filing, the deadline for the final reply brief on the merits was March 5, 2015. Accordingly, under Rule 8.520(f)(2), this application and brief are timely.

### 1. Background and Interest of San Joaquin Valley Unified Air Pollution Control District

The San Joaquin Valley Unified Air Pollution Control District ("Air District") regulates air quality in the eight counties comprising the San Joaquin Valley ("Central Valley"): Kern, Tulare, Madera, Fresno, Merced, San Joaquin, Stanislaus, and Kings, and is primarily responsible for attaining air quality standards within its jurisdiction. After billions of dollars of investment by Central Valley businesses, pioneering air quality regulations, and consistent efforts by residents, the Central Valley air basin has made historic improvements in air quality.

The Central Valley's geographical, topographical and meteorological features create exceptionally challenging air quality

conditions. For example, it receives air pollution transported from the San Francisco Bay Area and northern Central Valley communities, and the southern portion of the Central Valley includes three mountain ranges (Sierra, Tehachapi, and Coastal) that, under some meteorological conditions, effectively trap air pollution. Central Valley air pollution is only a fraction of what the Bay Area and Los Angeles produce, but these natural conditions result in air quality conditions that are only marginally better than Los Angeles, even though about ten times more pollution is emitted in the Los Angeles region. Bay Area air quality is much better than the Central Valley's, even though the Bay Area produces about six times more pollution. The Central Valley also receives air pollution transported from the Bay Area and northern counties in the Central Valley, including Sacramento, and transboundary anthropogenic ozone from as far away as China.

Notwithstanding these challenges, the Central Valley has reduced emissions at the same or better rate than other areas in California and has achieved unparalleled milestones in protecting public health and the environment:

- In the last decade, the Central Valley became the first air basin classified by the federal government under the Clean Air Act as a "serious nonattainment" area to come into attainment of health-based National Ambient Air Quality Standard ("NAAQS") for coarse particulate matter (PM10), an achievement made even more notable given the Valley's extensive agricultural sector. Unhealthy levels of particulate matter can cause and exacerbate a range of chronic and acute illnesses.
- In 2013, the Central Valley became the first air basin in the country to improve from a federal designation of "extreme" nonattainment to

actually attain (and quality for an attainment designation) of the 1-hour ozone NAAQS; ozone creates "smog" and, like PM10, causes adverse health impacts.

- The Central Valley also is in full attainment of federal standards for lead, nitrogen dioxide, sulfur dioxide, and carbon monoxide.
- The Central Valley continues to make progress toward compliance with its last two attainment standards, with the number of exceedences for the 8-hour ozone NAAQS reduced by 74% (for the 1997 standard) and 38% (for the 2008 standard) since 1991, and for the small particulate matter (PM2.5) NAAQS reduced by 85% (for the 1997 standard) and 61% (for the 2006 standard).

Sustained improvement in Central Valley air quality requires a rigorous and comprehensive regulatory framework that includes prohibitions (e.g., on wood-burning fireplaces in new residences), mandates (e.g., requiring the installation of best available pollution reduction technologies on new and modified equipment and industrial operations), innovations (e.g., fees assessed against residential development to fund pollution reduction actions to "offset" vehicular emissions associated with new residences), incentive programs (e.g., funding replacements of older, more polluting heavy duty trucks and school buses)[1], ongoing planning for continued air quality improvements, and enforcement of Air District permits and regulations.

The Air District is also an expert air quality agency for the eight counties and cities in the San Joaquin Valley. In that capacity, the Air District has developed air quality emission guidelines for use by the Central

---

[1] San Joaquin's incentive program has been so successful that through 2012, it has awarded over $ 432 million in incentive funds and has achieved 93,349 tons of lifetime emissions reductions. *See* SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, 2012 PM2.5 PLAN, 6-6 (2012) *available at* http://www.valleyair.org/Workshops/postings/2012/12-20-12PM25/FinalVersion/06%20Chapter%206%20Incentives.pdf.

Valley counties and cities that implement the California Environment Quality Act (CEQA).[2] In its guidance, the Air District has distinguished between toxic air contaminants and criteria air pollutants.[3] Recognizing this distinction, the Air District's CEQA Guidance has adopted distinct thresholds of significance for *criteria* pollutants (i.e., ozone, PM2.5 and their respective precursor pollutants) based upon scientific and factual data which demonstrates the level that can be accommodated on a cumulative basis in the San Joaquin Valley without affecting the attainment of the applicable NAAQS.[4] For *toxic air* pollutants, the District has adopted different thresholds of significance which scientific and factual data demonstrates has the potential to expose sensitive receptors (i.e., children, the elderly) to levels which may result in localized health impacts.[5]

The Air District's CEQA Guidance was followed by the County of Fresno in its environment review of the Friant Ranch project, for which the Air District also served as a commenting agency. The Court of Appeal's holding, however, requiring correlation between the project's criteria

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2 *See, e.g.*, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, PLANNING DIVISION, GUIDE FOR ASSESSING AND MITIGATING AIR QUALITY IMPACTS (2015), *available at* http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf ("CEQA Guidance").

3 Toxic air contaminants, also known as hazardous air pollutants, are those pollutants that are known or suspected to cause cancer or other serious health effects, such as birth defects. There are currently 189 toxic air contaminants regulated by the United States Environmental Protection Agency ("EPA") and the states pursuant to the Clean Air Act. 42 U.S.C. § 7412. Common TACs include benzene, perchloroethylene and asbestos. *Id.* at 7412(b).

In contrast, there are only six (6) criteria air pollutants: ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide and lead. Although criteria air pollutants can also be harmful to human health, they are distinguishable from toxic air contaminants and are regulated separately. For instance, while criteria pollutants are regulated by numerous sections throughout Title I of the Clean Air Act, the regulation of toxic air contaminants occurs solely under section 112 of the Act. Compare 42 U.S.C. §§ 7407 – 7411 & 7501 – 7515 with 42 U.S.C. § 7411.

4 See, e.g., CEQA Guidance at http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf, pp. 64-66, 80.

5 See, e.g., CEQA Guidance at http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf, pp. 66, 99-101.

pollutants and local health impacts, departs from the Air District's Guidance and approved methodology for assessing criteria pollutants. A close reading of the administrative record that gave rise to this issue demonstrates that the Court's holding is based on a misunderstanding of the distinction between toxic air contaminants (for which a local health risk assessment is feasible and routinely performed) and criteria air pollutants (for which a local health risk assessment is not feasible and would result in speculative results).[6] The Air District has a direct interest in ensuring the lawfulness and consistent application of its CEQA Guidance, and will explain how the Court of Appeal departed from the Air District's long-standing CEQA Guidance in addressing criteria pollutants and toxic air contaminants in this amicus brief.

### 2. How the Proposed Amicus Curiae Brief Will Assist the Court

As counsel for the proposed amicus curiae, we have reviewed the briefs filed in this action. In addition to serving as a "commentary agency" for CEQA purposes over the Friant Ranch project, the Air District has a strong interest in assuring that CEQA is used for its intended purpose, and believes that this Court would benefit from additional briefing explaining the distinction between criteria pollutants and toxic air contaminants and the different methodologies employed by local air pollution control agencies such as the Air District to analyze these two categories of air pollutants under CEQA. The Air District will also explain how the Court of Appeal's opinion is based upon a fundamental misunderstanding of these two different approaches by requiring the County of Fresno to correlate the project's *criteria* pollution emissions with *local* health impacts. In doing

[6] CEQA does not require speculation. *See, e.g.*, *Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal.*, 6 Cal. 4th 1112, 1137 (1993) (upholding EIR that failed to evaluate cumulative toxic air emission increases given absence of any acceptable means for doing so).

so, the Air District will provide helpful analysis to support its position that at least insofar as criteria pollutants are concerned, CEQA does not require an EIR to correlate a project's air quality emissions to specific health impacts, because such an analysis is not reasonably feasible.

**Rule 8.520 Disclosure**

Pursuant to Cal. R. 8.520(f)(4), neither the Plaintiffs nor the Defendant or Real Party In Interest or their respective counsel authored this brief in whole or in part. Neither the Plaintiffs nor the Defendant or Real Party in Interest or their respective counsel made any monetary contribution towards or in support of the preparation of this brief.

**CONCLUSION**

On behalf of the San Joaquin Valley Unified Air Pollution Control District, we respectfully request that this Court accept the filing of the attached brief.

Dated: April 2, 2015

Annette A. Ballatore-Williamson
District Counsel
Attorney for Proposed Amicus Curiae

SAN JOAQUIN VALLEY UNIFIED
AIR POLLUTION CONTROL
DISTRICT

**CASE NO. S219783**

**IN THE SUPREME COURT OF CALIFORNIA**

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SIERRA CLUB, REVIVE THE SAN JOAQUIN, and
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After a Decision by the Court of Appeal, filed May 27, 2014
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Appeal from the Superior Court of California, County of Fresno
Case No. 11CECG00726

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---

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## CASES

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*Citizens for Responsible Equitable Environmental Development v. City of San Diego*, (2011) 196 Cal.App.4th 515, 527 129 Cal.Rptr.3d 512, 521........................................................................14

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*Sierra Club v. City of Orange*,163 Cal.App.4th at 536.....................................15

*Sierra Club v. County of Fresno* (2014) 172 Cal.Rptr.3d 271, 306..............12

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## FEDERAL STATUTES

United States Environmental Protection Agency ("EPA") Clean Air Act. 42 U.S.C. § 7412 ..........................................1,2,5,6

42 U.S.C. § 7412.........................................................................1

U.S.C. §§ 7407 – 7411.................................................................1

U.S.C. §§ 7501 – 7515.................................................................1

42 U.S.C. § 7411.........................................................................1

42 U.S.C. § 7412(b).....................................................................1,2

42 U.S.C. § 7409(b)(1) ................................................................ 2, 6

## CALIFORNIA STATUTES

California Environmental Quality Act ("CEQA")..............................................*passim*

## OTHER AUTHORITIES


United States Environmental Protection Agency,
*Ground-level Ozone: Basic Information*,
available at: http://www.epa.gov/airquality/ozonepollution/basic.html
(visited March 10, 015)........................................................................4

*San Joaquin Valley Air Pollution Control District 2007 Ozone Plan*,
Executive Summary p. ES-6, available at:
http://www.valleyair.org/Air_Quality_Plans/docs/AQ_Ozone_2007_
Adopted/03%20Executive%20Summary.pdf (visited March 10, 2015)................5

United States Environmental Protection Agency, *Particulate Matter:
Basic Information*, available at:
http://www.epa.gov/airquality/particlepollution/basic.html
(visited March 10, 2015)........................................................................5

United States Environmental Protection Agency, *Table of
National Ambient Air Quality Standards*, available at:
http://www.epa.gov/air/criteria.html#3 (visited March 10, 2015) ......................6

*San Joaquin Valley Unified Air Pollution Control District 2013
Plan for the Revoked 1-Hour Ozone Standard*, Ch. 2 p. 2-16,
available at: http://www.valleyair.org/Air_Quality_Plans/OzoneOneHourPlan
2013/02Chapter2ScienceTrendsModeling.pdf (visited March 10, 2015..............6

Ch. 2 p. 2-19 (visited March 12, 2015); *San Joaquin Valley Unified
Air Pollution Control District 2008 PM2.5 Plan*,
Appendix F, pp. F-2 – F-5, available at:
http://www.valleyair.org/Air_Quality_Plans/docs/AQ_Final_Adopted
_PM2.5/20%20Appendix%20F.pdf (visited March 19, 2015)........................6

San Joaquin Valley Unified Air Pollution Control District Rule 2201 §§ 2.0;
3.3.9; 4.14.1, available at:
http://www.valleyair.org/rules/currntrules/Rule22010411.pdf
(visited March 19, 2015)........................................................................7

*San Joaquin Valley Unified Air Pollution Control District Guide to
Assessing and Mitigating Air Quality Impacts*, (March 19, 2015) p. 22,
available at:
http://www.valleyair.org/transportation/CEQA%20Rules/GAMAQI%20Jan
%202002%20Rev.pdf (visited March 30, 2015)..........................................7

*San Joaquin Valley Unified Air Pollution Control District Environmental Review Guidelines* (Aug. 2000) p. 4-11, available at: http://www.valleyair.org/transportation/CEQA%20Rules/ERG%20 Adopted%20_August%202000_.pdf (visited March 12, 2015)....................8

*San Joaquin Valley Unified Air Pollution Control District 2007 Ozone Plan*, Appendix B pp. B-6, B-9, available at: http://www.valleyair.org/Air_Quality_ Plans/docs/AQ_Ozone_2007_Adopted/19%20Appendix%20B%20April% 202007.pdf (visited March 12, 2015)...............................................9

# I. INTRODUCTION.

The San Joaquin Valley Unified Air Pollution Control District ("Air District") respectfully submits that the Court of Appeal erred when it held that the air quality analysis contained in the Environmental Impact Report ("EIR") for the Friant Ranch development project was inadequate under the California Environmental Quality Act ("CEQA") because it did not include an analysis of the correlation between the project's criteria air pollutants and the potential adverse human health impacts. A close reading of the portion of the administrative record that gave rise to this issue demonstrates that the Court's holding is based on a misunderstanding of the distinction between toxic air contaminants and criteria air pollutants.

Toxic air contaminants, also known as hazardous air pollutants, are those pollutants that are known or suspected to cause cancer or other serious health effects, such as birth defects. There are currently 189 toxic air contaminants (hereinafter referred to as "TACs") regulated by the United States Environmental Protection Agency ("EPA") and the states pursuant to the Clean Air Act. 42 U.S.C. § 7412. Common TACs include benzene, perchloroethylene and asbestos. *Id.* at 7412(b).

In contrast, there are only six (6) criteria air pollutants: ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide and lead. Although criteria air pollutants can also be harmful to human health,

they are distinguishable from TACs and are regulated separately. For instance, while criteria pollutants are regulated by numerous sections throughout Title I of the Clean Air Act, the regulation of TACs occurs solely under section 112 of the Act. *Compare* 42 U.S.C. §§ 7407 – 7411 & 7501 – 7515 *with* 42 U.S.C. § 7411.

The most relevant difference between criteria pollutants and TACs for purposes of this case is the manner in which human health impacts are accounted for. While it is common practice to analyze the correlation between an individual facility's TAC emissions and the expected localized human health impacts, such is not the case for criteria pollutants. Instead, the human health impacts associated with criteria air pollutants are analyzed and taken into consideration when EPA sets the national ambient air quality standard ("NAAQS") for each criteria pollutant. 42 U.S.C. § 7409(b)(1). The health impact of a particular criteria pollutant is analyzed on a regional and not a facility level based on how close the area is to complying with (attaining) the NAAQS. Accordingly, while the type of individual facility / health impact analysis that the Court of Appeal has required is a customary practice for TACs, it is not feasible to conduct a similar analysis for criteria air pollutants because currently available computer modeling tools are not equipped for this task.

It is clear from a reading of both the administrative record and the Court of Appeal's decision that the Court did not have the expertise to fully

appreciate the difference between TACs and criteria air pollutants. As a result, the Court has ordered the County of Fresno to conduct an analysis that is not practicable and not likely yield valid information. The Air District respectfully requests that this portion of the Court of Appeal's decision be reversed.

## II. THE COURT OF APPEAL ERRED IN FINDING THE FRIANT RANCH EIR INADEQUATE FOR FAILING TO ANALYZE THE SPECIFIC HUMAN HEALTH IMPACTS ASSOCIATED CRITERIA AIR POLLUTANTS.

Although the Air District does not take lightly the amount of air emissions at issue in this case, it submits that the Court of Appeal got it wrong when it required Fresno County to revise the Friant Ranch EIR to include an analysis correlating the criteria air pollutant emissions associated with the project with specific, localized health-impacts. The type of analysis the Court of Appeal has required will not yield reliable information because currently available modeling tools are not well suited for this task. Further, in reviewing this issue de novo, the Court of Appeal failed to appreciate that it lacked the scientific expertise to appreciate the significant differences between a health risk assessment commonly performed for toxic air contaminants and a similar type of analysis it felt should have been conducted for criteria air pollutants.

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### A. Currently Available Modeling Tools are not Equipped to Provide a Meaningful Analysis of the Correlation between an Individual Development Project's Air Emissions and Specific Human Health Impacts.

In order to appreciate the problematic nature of the Court of Appeals' decision requiring a health risk type analysis for criteria air pollutants, it is important to understand how the relevant criteria pollutants (ozone and particulate matter) are formed, dispersed and regulated.

Ground level ozone (smog) is not directly emitted into the air, but is formed when precursor pollutants such as oxides of nitrogen (NOx) and volatile organic compounds (VOCs) are emitted into the atmosphere and undergo complex chemical reactions in the process of sunlight.[1] Once formed, ozone can be transported long distances by wind.[2] Because of the complexity of ozone formation, a specific tonnage amount of NOx or VOCs emitted in a particular area does not equate to a particular concentration of ozone in that area. In fact, even rural areas that have relatively low tonnages of emissions of NOx or VOCs can have high levels of ozone concentration simply due to wind transport.[3] Conversely, the San Francisco Bay Area has six times more NOx and VOC emissions per square mile than the San Joaquin Valley, but experiences lower

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[1] *See* United States Environmental Protection Agency, *Ground-level Ozone: Basic Information*, available at: http://www.epa.gov/airquality/ozonepollution/basic.html (visited March 10, 2015).
[2] *Id.*
[3] *Id.*

concentrations of ozone (and better air quality) simply because sea breezes disperse the emissions.[4]

Particulate matter ("PM") can be divided into two categories: directly emitted PM and secondary PM.[5] While directly emitted PM can have a localized impact, the tonnage emitted does not always equate to the local PM concentration because it can be transported long distances by wind.[6] Secondary PM, like ozone, is formed via complex chemical reactions in the atmosphere between precursor chemicals such as sulfur dioxides (SOx) and NOx.[7] Because of the complexity of secondary PM formation, the tonnage of PM-forming precursor emissions in an area does not necessarily result in an equivalent concentration of secondary PM in that area.

The disconnect between the *tonnage* of precursor pollutants (NOx, SOx and VOCs) and the *concentration* of ozone or PM formed is important because it is not necessarily the tonnage of precursor pollutants that causes human health effects, but the concentration of resulting ozone or PM. Indeed, the national ambient air quality standards ("NAAQS"), which are statutorily required to be set by the United States Environmental Protection

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[4] *San Joaquin Valley Air Pollution Control District 2007 Ozone Plan*, Executive Summary p. ES-6, available at: http://www.valleyair.org/Air_Quality_Plans/docs/AQ_Ozone_2007_Adopted/03%20Executive%20Summary.pdf (visited March 10, 2015).

[5] United States Environmental Protection Agency, *Particulate Matter: Basic Information*, available at: http://www.epa.gov/airquality/particlepollution/basic.html (visited March 10, 2015).

[6] *Id.*

[7] *Id.*

Agency ("EPA") at levels that are "requisite to protect the public health," 42 U.S.C. § 7409(b)(1), are established as concentrations of ozone or particulate matter and not as tonnages of their precursor pollutants.[8]

Attainment of a particular NAAQS occurs when the concentration of the relevant pollutant remains below a set threshold on a consistent basis throughout a particular region. For example, the San Joaquin Valley attained the 1-hour ozone NAAQS when ozone concentrations remained at or below 0.124 parts per million Valley-wide on 3 or fewer days over a 3-year period.[9] Because the NAAQS are focused on achieving a particular concentration of pollution region-wide, the Air District's tools and plans for attaining the NAAQS are regional in nature.

For instance, the computer models used to simulate and predict an attainment date for the ozone or particulate matter NAAQS in the San Joaquin Valley are based on regional inputs, such as regional inventories of precursor pollutants (NOx, SOx and VOCs) and the atmospheric chemistry and meteorology of the Valley.[10] At a very basic level, the models simulate future ozone or PM levels based on predicted changes in precursor

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[8] See, e.g., United States Environmental Protection Agency, *Table of National Ambient Air Quality Standards*, available at: http://www.epa.gov/air/criteria.html#3 (visited March 10, 2015).

[9] *San Joaquin Valley Unified Air Pollution Control District 2013 Plan for the Revoked 1-Hour Ozone Standard*, Ch. 2 p. 2-16, available at: http://www.valleyair.org/Air_Quality_Plans/OzoneOneHourPlan2013/02Chapter2ScienceTrendsModeling.pdf (visited March 10, 2015).

[10] *Id.* at Ch. 2 p. 2-19 (visited March 12, 2015); *San Joaquin Valley Unified Air Pollution Control District 2008 PM2.5 Plan*, Appendix F, pp. F-2 – F-5, available at: http://www.valleyair.org/Air_Quality_Plans/docs/AQ_Final_Adopted_PM2.5/20%20Appendix%20F.pdf
(visited March 19, 2015).

emissions Valley wide.[11] Because the NAAQS are set levels necessary to protect human health, the closer a region is to attaining a particular NAAQS, the lower the human health impact is from that pollutant.

The goal of these modeling exercises is not to determine whether the emissions generated by a particular factory or development project will affect the date that the Valley attains the NAAQS. Rather, the Air District's modeling and planning strategy is regional in nature and based on the extent to which *all* of the emission-generating sources in the Valley (current and future) must be controlled in order to reach attainment.[12]

Accordingly, the Air District has based its thresholds of significance for CEQA purposes on the levels that scientific and factual data demonstrate that the Valley can accommodate without affecting the attainment date for the NAAQS.[13] The Air District has tied its CEQA significance thresholds to the level at which stationary pollution sources permitted by the Air District must "offset" their emissions.[14] This "offset"

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[11] *Id.*

[12] Although the Air District does have a dispersion modeling tool used during its air permitting process that is used to predict whether a particular project's directly emitted PM will either cause an exceedance of the PM NAAQS or contribute to an existing exceedance, this model bases the prediction on a worst case scenario of emissions and meteorology and has no provision for predicting any associated human health impacts. Further, this analysis is only performed for stationary sources (factories, oil refineries, etc.) that are required to obtain a New Source Review permit from the Air District and not for development projects such as Friant Ranch over which the Air District has no preconstruction permitting authority. *See* San Joaquin Valley Unified Air Pollution Control District Rule 2201 §§ 2.0; 3.3.9; 4.14.1, available at: http://www.valleyair.org/rules/currntrules/Rule2201041l.pdf (visited March 19, 2015).

[13] *San Joaquin Valley Unified Air Pollution Control District Guide to Assessing and Mitigating Air Quality Impacts*, (March 19, 2015) p. 22, available at: http://www.valleyair.org/transportation/CEQA%20Rules/GAMAQI%20Jan%202002%20Rev.pdf (visited March 30, 2015).

[14] *Id.* at pp. 22, 25.

level allows for growth while keeping the cumulative effects of all new sources at a level that will not impede attainment of the NAAQS.[15] In the Valley, these thresholds are 15 tons per year of PM, and 10 tons of NOx or VOC per year. *Sierra Club*, *supra*, 172 Cal.Rptr.3d at 303; AR 4554. Thus, the CEQA air quality analysis for criteria pollutants is not really a localized, project-level impact analysis but one of regional, "cumulative impacts."

Accordingly, the significance thresholds applied in the Friant Ranch EIR (15 tons per year of PM and 10 tons of NOx or VOCs) are not intended to be indicative of any localized human health impact that the project may have. While the health effects of air pollution are of primary concern to the Air District (indeed, the NAAQS are established to protect human health), the Air District is simply not equipped to analyze whether and to what extent the criteria pollutant emissions of an individual CEQA project directly impact human health in a particular area. This is true even for projects with relatively high levels of emissions of criteria pollutant precursor emissions.

For instance, according to the EIR, the Friant Ranch project is estimated to emit 109.52 tons per year of ROG (VOC), 102.19 tons per year of NOx, and 117.38 tons per year of PM. Although these levels well

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[15] [15] *San Joaquin Valley Unified Air Pollution Control District Environmental Review Guidelines* (Aug. 2000) p. 4-11, available at: http://www.valleyair.org/transportation/CEQA%20Rules/ERG%20Adopted%20_August%202000_.pdf (visited March 12, 2015).

exceed the Air District's CEQA significance thresholds, this does not mean that one can easily determine the concentration of ozone or PM that will be created at or near the Friant Ranch site on a particular day or month of the year, or what specific health impacts will occur. Meteorology, the presence of sunlight, and other complex chemical factors all combine to determine the ultimate concentration and location of ozone or PM. This is especially true for a project like Friant Ranch where most of the criteria pollutant emissions derive not from a single "point source," but from area wide sources (consumer products, paint, etc.) or mobile sources (cars and trucks) driving to, from and around the site.

In addition, it would be extremely difficult to model the impact on NAAQS attainment that the emissions from the Friant Ranch project may have. As discussed above, the currently available modeling tools are equipped to model the impact of *all* emission sources in the Valley on attainment. According to the most recent EPA-approved emission inventory, the NOx inventory for the Valley is for the year 2014 is 458.2 tons per day, or 167,243 tons per year and the VOC (or ROG) inventory is 361.7 tons per day, or 132,020.5 tons per year.[16] Running the photochemical grid model used for predicting ozone attainment with the

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[16] *San Joaquin Valley Unified Air Pollution Control District 2007 Ozone Plan*, Appendix B pp. B-6, B-9,
available at:
http://www.valleyair.org/Air_Quality_Plans/docs/AQ_Ozone_2007_Adopted/19%20Appendix%20B%20April%202007.pdf (visited March 12, 2015).

emissions solely from the Friant Ranch project (which equate to less than one-tenth of one percent of the total NOx and VOC in the Valley) is not likely to yield valid information given the relative scale involved.

Finally, even once a model is developed to accurately ascertain local increases in concentrations of photochemical pollutants like ozone and some particulates, it remains impossible, using today's models, to correlate that increase in concentration to a specific health impact. The reason is the same: such models are designed to determine regional, population-wide health impacts, and simply are not accurate when applied at the local level.

For these reasons, it is not the norm for CEQA practitioners, including the Air District, to conduct an analysis of the localized health impacts associated with a project's criteria air pollutant emissions as part of the EIR process. When the accepted scientific method precludes a certain type of analysis, "the court cannot impose a legal standard to the contrary." *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 717 n. 8. However, that is exactly what the Court of Appeal has done in this case. Its decision upends the way CEQA air quality analysis of criteria pollutants occurs and should be reversed.

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### B. The Court of Appeal Improperly Extrapolated a Request for a Health Risk Assessment for Toxic Air Contaminants into a Requirement that the EIR contain an Analysis of Localized Health Impacts Associated with Criteria Air Pollutants.

The Court of Appeal's error in requiring the new health impact analysis for criteria air pollutants clearly stems from a misunderstanding of terms of art commonly used in the air pollution field. More specifically, the Court of Appeal (and Appellants Sierra Club et al.) appear to have confused the health risk analysis ("HRA") performed to determine the health impacts associated with a project's toxic air contaminants ("TACs"), with an analysis correlating a project's criteria air pollutants (ozone, PM and the like) with specific localized health impacts.

The first type of analysis, the HRA, is commonly performed during the Air District's stationary source permitting process for projects that emit TACs and is, thus, incorporated into the CEQA review process. An HRA is a comprehensive analysis to evaluate and predict the dispersion of TACs emitted by a project and the potential for exposure of human populations. It also assesses and quantifies both the individual and population-wide health risks associated with those levels of exposure. There is no similar analysis conducted for criteria air pollutants. Thus, the second type of analysis (required by the Court of Appeal), is not currently part of the Air District's process because, as outlined above, the health risks associated

with exposure to criteria pollutants are evaluated on a regional level based on the region's attainment of the NAAQS.

The root of this confusion between the types of analyses conducted for TACs versus criteria air pollutants appears to stem from a comment that was presented to Fresno County by the City of Fresno during the administrative process.

In its comments on the draft EIR, the City of Fresno (the only party to raise this issue) stated:

> [t]he EIR must disclose the human health related effects of the Project's air pollution impacts. (CEQA Guidelines section 15126.2(a).) The EIR fails completely in this area. The EIR should be revised to disclose and determine the significance of TAC impacts, and of human health risks due to exposure to Project-related air emissions.

(AR 4602.)

In determining that the issue regarding the correlation between the Friant Ranch project's criteria air pollutants and adverse health impacts was adequately exhausted at the administrative level, the Court of Appeal improperly read the first two sentences of the City of Fresno's comment in isolation rather than in the context of the entire comment. *See Sierra Club v. County of Fresno* (2014) 172 Cal.Rptr.3d 271, 306. Although the comment first speaks generally in terms of "human health related effects" and "air pollution," it requests only that the EIR be revised to disclose "the significance of TACs" and the "human health risks due to exposure."

The language of this request in the third sentence of the comment is significant because, to an air pollution practitioner, the language would only have indicated only that a HRA for TACs was requested, and not a separate analysis of the health impacts associated with the project's criteria air pollutants. Fresno County clearly read the comment as a request to perform an HRA for TACs and limited its response accordingly. (AR 4602.)[17] The Air District submits that it would have read the City's comment in the same manner as the County because the City's use of the terms "human health risks" and "TACs" signal that an HRA for TACs is being requested. Indeed, the Air District was also concerned that an HRA be conducted, but understood that it was not possible to conduct such an analysis until the project entered the phase where detailed site specific information, such as the types of emission sources and the proximity of the sources to sensitive receptors became available. (AR 4553.)[18] The City of Fresno was apparently satisfied with the County's discussion of human health risks, as it did not raise the issue again when it commented on the final EIR. (AR 8944 – 8960.)

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[17] Appellants do not challenge the manner in which the County addressed TACs in the EIR. (Appellants' Answer Brief p. 28 fn. 7.)

[18] Appellants rely on the testimony of Air District employee, Dan Barber, as support for their position that the County should have conducted an analysis correlating the project's criteria air pollutant emissions with localized health impacts. (Appellants Answer Brief pp. 10-11; 28.) However, Mr. Barber's testimony simply reinforces the Air District's concern that a risk assessment (HRA) be conducted once the actual details of the project become available. (AR 8863.) As to criteria air pollutants, Mr. Barber's comments are aimed at the Air District's concern about the amount of emissions and the fact that the emissions will make it "more difficult for Fresno County and the Valley to reach attainment which means that the health of Valley residents maybe [sic] adversely impacted." Mr. Barber says nothing about conducting a separate analysis of the localized health impacts the project's emissions may have.

The Court of Appeal's holding, which incorrectly extrapolates a request for an HRA for TACs into a new analysis of the localized health impacts of the project's criteria air pollutants, highlights two additional errors in the Court's decision.

First, the Court of Appeal's holding illustrates why the Court should have applied the deferential substantial evidence standard of review to the issue of whether the EIR's air quality analysis was sufficient. The regulation of air pollution is a technical and complex field and the Court of Appeal lacked the expertise to fully appreciate the difference between TACs and criteria air pollutants and tools available for analyzing each type of pollutant.

Second, it illustrates that the Court likely got it wrong when it held that the issue regarding the criteria pollutant / localized health impact analysis was properly exhausted during the administrative process. In order to preserve an issue for the court, '[t]he "exact issue" must have been presented to the administrative agency....' [Citation.] *Citizens for Responsible Equitable Environmental Development v. City of San Diego*, (2011) 196 Cal.App.4th 515, 527 129 Cal.Rptr.3d 512, 521; *Sierra Club v. City of Orange* (2008) 163 Cal.App.4th 523, 535, 78 Cal.Rptr.3d 1, 13. "'[T]he objections must be sufficiently specific so that the agency has the

opportunity to evaluate and respond to them.' [Citation.]" *Sierra Club v. City of Orange*,163 Cal.App.4th at 536.[19]

As discussed above, the City's comment, while specific enough to request a commonly performed HRA for TACs, provided the County with no notice that it should perform a new type of analysis correlating criteria pollutant tonnages to specific human health effects. Although the parties have not directly addressed the issue of failure to exhaust administrative remedies in their briefs, the Air District submits that the Court should consider how it affects the issues briefed by the parties since "[e]xhaustion of administrative remedies is a jurisdictional prerequisite to maintenance of a CEQA action." *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1199, 22 Cal.Rptr.3d 203.

## III. CONCLUSION

For all of the foregoing reasons, the Air District respectfully requests that the portion of the Court of Appeal's decision requiring an analysis correlating the localized human health impacts associated with an individual project's criteria air pollutant emissions be reversed.

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[19] *Sierra Club v. City of Orange*, is illustrative here. In that case, the plaintiffs challenged an EIR approved for a large planned community on the basis that the EIR improperly broke up the various environmental impacts by separate project components or "piecemealed" the analysis in violation of CEQA. In evaluating the defense that the plaintiffs had failed to adequately raise the issue at the administrative level, the Court held that comments such as *"the use of a single document for both a project-level and a program-level EIR [is] 'confusing',"* and *"[t]he lead agency should identify any potential adverse air quality impacts that could occur from all phases of the project and all air pollutant sources related to the project,"* were too vague to fairly raise the argument of piecemealing before the agency. *Sierra Club v. City of Orange*, 163 Cal.App.4th at 537.

correlating the localized human health impacts associated with an individual project's criteria air pollutant emissions be reversed.

Respectfully submitted,

Dated: April 2, 2015

Catherine T. Redmond
Attorney for Proposed Amicus Curiae

SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT

## CERTIFICATE OF WORD COUNT

Pursuant to Rule 8.204 of the California Rules of Court, I hereby certify that this document, based on the Word County feature of the Microsoft Word software program used to compose and print this document, contains, exclusive of caption, tables, certificate of word count, signature block and certificate of service, 3806 words.

Dated: April 2, 2015

Annette A. Ballatore-Williamson
District Counsel (SBN 192176)

*Sierra Club et al, v. County of Fresno, et al*
**Supreme Court of California Case No.: S219783**
Fifth District Court of Appeal Case No.: F066798
Fresno County Superior Court Case No.: 11CECG00726

## PROOF OF SERVICE

I am over the age of 18 years and not a p[arty to the above-captioned action; that my business address is San Joaquin Valley Unified Air Pollution Control District located at 1990 E. Gettysburg Avenue, Fresno, California 93726.

On April 2, 2015, I served the document described below:

**APPLICATION FOR LEAVE TO FILE AMICUS CURIAE BRIEF OF SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT IN SUPPORT OF DEFENDANT AND RESPONDENT, COUNTY OF FRESNO**

On all parties to this action at the following addresses and in the following manner:

**PLEASE SEE ATTACHED SERVICE LIST**

(XX) **(BY MAIL)** I caused a true copy of each document(s) to be laced in a sealed envelope with first-class postage affixed and placed the envelope for collection. Mail is collected daily at my office and placed in a United State Postal Service collection box for pick-up and delivery that same day.

( ) **(BY ELECTRONIC MAIL)** I caused a true and correct scanned image (.PDF file) copy to be transmitted via electronic mail transfer system in place at the San Joaquin Valley Unified Air Pollution Control District ("District"), originating from the undersigned at 1990 E. Gettysburg Avenue, Fresno, CA, to the address(es) indicated below.

( ) **(BY OVERNIGHT MAIL)** I caused a true and correct copy to be delivered via Federal Express to the following person(s) or their representative at the address(es) listed below.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that I executed this document on April 2, 2015, at Fresno, California.

Esthela Soto

# SERVICE LIST

***Sierra Club et al, v. County of Fresno, et al***
**Supreme Court of California Case No.: S219783**
Fifth District Court of Appeal Case No.: F066798
Fresno County Superior Court Case No.: 11CECG00726

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# APPENDIX D

# BIOLOGICAL RESOURCE EVALUATION

## DECEMBER 2020

**LEMOORE RESIDENTIAL DEVELOPMENT PROJECT**
KINGS COUNTY, CALIFORNIA

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# Executive Summary

The Assemi Group / Granville Homes proposes to construct a residential development in Lemoore, Kings County, California. The proposed project (Project) will involve developing a 156-acre parcel that currently supports an alfalfa field into a 900-unit residential development.

To evaluate whether the Project may affect biological resources under California Environmental Quality Act (CEQA) purview, we (1) obtained lists of special-status species from the California Department of Fish and Wildlife, the United States Fish and Wildlife Service, and the California Native Plant Society; (2) reviewed other relevant background information such as aerial images and topographic maps; and (3) conducted a field reconnaissance survey at the Project site.

This biological resource evaluation summarizes (1) existing biological conditions on the Project site, (2) the potential for special-status species and regulated habitats to occur on or near the Project site, (3) the potential impacts of the proposed Project on biological resources and regulated habitats, and (4) measures to reduce those potential impacts to less-than-significant levels under CEQA.

We concluded that the Project could impact one special-status species, the state listed as threatened Swainson's hawk (*Buteo swainsoni*). Nesting migratory birds could also be impacted. Impacts to all species can be reduced to less-than-significant levels with mitigation.

# Abbreviations

| Abbreviation | Definition |
|---|---|
| CCR | California Code of Regulations |
| CDFW | California Department of Fish and Wildlife |
| CEQA | California Environmental Quality Act |
| CESA | California Endangered Species Act |
| CFGC | California Fish and Game Code |
| CFR | Code of Federal Regulations |
| CNDDB | California Natural Diversity Data Base |
| CNPS | California Native Plant Society |
| CRPR | California Rare Plant Rank |
| CWC | California Water Code |
| FE | Federally listed as Endangered |
| FESA | Federal Endangered Species Act |
| FP | State Fully Protected |
| FT | Federally listed as Threatened |
| MBTA | Migratory Bird Treaty Act |
| NMFS | National Marine Fisheries Service |
| NOAA | National Oceanic and Atmospheric Association |
| NRCS | Natural Resources Conservation Science |
| SE | State listed as Endangered |
| SSSC | State Species of Special Concern |
| ST | State listed as Threatened |
| SWRCB | State Water Resources Control Board |
| USACE | United States Army Corps of Engineers |
| USC | United States Code |
| USFWS | United States Fish and Wildlife Service |
| USGS | United States Geological Survey |

# 1.0 Introduction

## 1.1 Background

The Assemi Group / Granville Homes proposes to construct a 900-unit residential development (the Project) on a 156-acre site south of Lacey Boulevard and east of 18th Avenue in Lemoore, Kings County, California.

The purpose of this biological resource evaluation is to assess whether the Project will affect protected biological resources pursuant to the California Environmental Quality Act (CEQA) guidelines. Such resources include species of plants or animals listed or proposed for listing under the Federal Endangered Species Act (FESA) or the California Endangered Species Act (CESA) as well as those covered under the Migratory Bird Treaty Act (MBTA), the California Native Plant Protection Act, and various other sections of California Fish and Game Code. This biological resource evaluation also addresses Project-related impacts to regulated habitats, which are those under the jurisdiction of the United States Army Corps of Engineers (USACE), State Water Resources Control Board (SWRCB), or California Department of Fish and Wildlife (CDFW).

## 1.2 Project Description

This Project will involve constructing a 900-unit residential development on a 156-acre parcel that currently supports an alfalfa field.

## 1.3 Project Location

The 156-acre Project site is in Lemoore, Kings County, California (Figure 1). It is bounded by Lacey Boulevard to the north, residential development to the south, a walnut orchard to the east, and 18th Avenue to the west (Figure 2).

**Figure 1.** Project site vicinity map.

**Figure 2.** Project site map.

## 1.4 Purpose and Need of Proposed Project

The purpose of the Project is to construct a residential development on the Project site and annex the parcel into the City of Lemoore. The Project is needed to increase single-family residences in the City.

## 1.5 Regulatory Framework

The relevant state and federal regulatory requirements and policies that guide the impact analysis of the Project are summarized below.

### 1.5.1 State Requirements

***California Endangered Species Act.*** The California Endangered Species Act (CESA) of 1970 (Fish and Game Code § 2050 et seq., and California Code of Regulations [CCR] Title 14, Subsection 670.2, 670.51) prohibits the take of species listed under CESA (14 CCR Subsection 670.2, 670.5). Take is defined as hunt, pursue, catch, capture, or kill or attempt to hunt, pursue, catch, capture, or kill. Under CESA, state agencies are required to consult with the CDFW when preparing CEQA documents. Consultation ensures that proposed projects or actions do not have a negative effect on state listed species. During consultation, CDFW determines whether take would occur and identifies "reasonable and prudent alternatives" for the project and conservation of special-status species. CDFW can authorize take of state listed species under Sections 2080.1 and 2081(b) of the California Fish and Game Code in those cases where it is demonstrated that the impacts are minimized and mitigated. Take authorized under section 2081(b) must be minimized and fully mitigated. A CESA permit must be obtained if a project will result in take of listed species, either during construction or over the life of the project. Under CESA, CDFW is responsible for maintaining a list of threatened and endangered species designated under state law (Fish and Game Code § 2070). CDFW also maintains lists of species of special concern, which serve as "watch lists." Pursuant to the requirements of CESA, a state or local agency reviewing a proposed project within its jurisdiction must determine whether the proposed project will have a potentially significant impact upon such species. Project-related impacts to species on the CESA list would be considered significant and would require mitigation. Impacts to species of concern or fully protected species would be considered significant under certain circumstances.

***California Environmental Quality Act.*** The California Environmental Quality Act (CEQA) of 1970 (Subsections 21000–21178) requires that CDFW be consulted during the CEQA review process regarding impacts of proposed projects on special-status species. Special-status species are defined under CEQA Guidelines subsection 15380(b) and (d) as those listed under FESA and CESA and species that are not currently protected by statute or regulation but would be considered rare, threatened, or endangered under these criteria or by the scientific community. Therefore, species considered rare or endangered are addressed in this biological resource evaluation regardless of whether they are afforded protection through any other statute or regulation. The

California Native Plant Society (CNPS) inventories the native flora of California and ranks species according to rarity (CNPS 2020). Plants with Rare Plant Ranks 1A, 1B, 2A, or 2B are considered special-status species under CEQA.

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines Section 15380(d) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if it can be shown to meet certain specified criteria. These criteria have been modeled after the definition in the FESA and the section of the California Fish and Game Code dealing with rare and endangered plants and animals. Section 15380(d) allows a public agency to undertake a review to determine if a significant effect on species that have not yet been listed by either the United States Fish and Wildlife Service or CDFW (i.e., candidate species) would occur. Thus, CEQA provides an agency with the ability to protect a species from the potential impacts of a project until the respective government agency has an opportunity to designate the species as protected, if warranted.

***California Native Plant Protection Act.*** The California Native Plant Protection Act of 1977 (California Fish and Game Code §§ 1900–1913) requires all state agencies to use their authority to carry out programs to conserve endangered and otherwise rare species of native plants. Provisions of the act prohibit the taking of listed plants from the wild and require the project proponent to notify CDFW at least 10 days in advance of any change in land use, which allows CDFW to salvage listed plants that would otherwise be destroyed.

***Nesting birds.*** California Fish and Game Code Sections 3503, 3503.5, and 3800 prohibit the possession, incidental take, or needless destruction of birds, their nests, and eggs. California Fish and Game Code Section 3511 lists birds that are "Fully Protected" as those that may not be taken or possessed except under specific permit.

***California Department of Fish and Wildlife Jurisdiction.*** The CDFW has regulatory jurisdiction over lakes and streams in California. Activities that divert or obstruct the natural flow of a stream; substantially change its bed, channel, or bank; or use any materials (including vegetation) from the streambed, may require that the project applicant enter into a Lake and Streambed Alteration Agreement with the CDFW in accordance with California Fish and Game Code Section 1602.

***Porter-Cologne Water Quality Control Act*.** The Porter-Cologne Water Quality Control Act (CWC § 13000 et. sec.) was established in 1969 and entrusts the State Water Resources Control Board and nine Regional Water Quality Control Boards (collectively Water Boards) with the responsibility to preserve and enhance all beneficial uses of California's diverse waters. The Act grants the Water Boards authority to establish water quality objectives and regulate point- and nonpoint-source pollution discharge to the state's surface and ground waters. Under the auspices of the United States Environmental Protection Agency, the Water Boards are responsible for certifying, under Section 401 of the federal Clean Water Act, that activities affecting waters of the United States comply California water quality standards. The Porter-Cologne Water Quality Control Act addresses all "waters of the State," which are more broadly

defined than waters of the Unites States. Waters of the State include any surface water or groundwater, including saline waters, within the boundaries of the state. They include artificial as well as natural water bodies and federally jurisdictional and federally non-jurisdictional waters. The Water Boards may issue a Waste Discharge Requirement permit for projects that will affect only federally non-jurisdictional waters of the State.

### 1.5.2 Federal Requirements

***Federal Endangered Species Act***. The United States Fish and Wildlife Service (USFWS) and the National Oceanographic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) enforce the provisions stipulated in the Federal Endangered Species Act of 1973 (FESA, 16 United States Code [USC] § 1531 et seq.). Threatened and endangered species on the federal list (50 Code of Federal Regulations [CFR] 17.11 and 17.12) are protected from take unless a Section 10 permit is granted to an entity other than a federal agency or a Biological Opinion with incidental take provisions is rendered to a federal lead agency via a Section 7 consultation. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct. Pursuant to the requirements of the FESA, an agency reviewing a proposed action within its jurisdiction must determine whether any federally listed species may be present in the proposed action area and determine whether the proposed action may affect such species. Under the FESA, habitat loss is considered an effect to a species. In addition, the agency is required to determine whether the proposed action is likely to jeopardize the continued existence of any species that is listed or proposed for listing under the FESA (16 USC § 1536[3], [4]). Therefore, proposed action-related effects to these species or their habitats would be considered significant and would require mitigation.

***Migratory Bird Treaty Act.*** The federal Migratory Bird Treaty Act (MBTA) (16 USC § 703, Supp. I, 1989) prohibits killing, possessing, trading, or other forms of take of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. "Take" is defined as the pursuing, hunting, shooting, capturing, collecting, or killing of birds, their nests, eggs, or young (16 USC § 703 and § 715n). This act encompasses whole birds, parts of birds, and bird nests and eggs. The MBTA specifically protects migratory bird nests from possession, sale, purchase, barter transport, import, and export, and take. For nests, the definition of take per 50 CFR 10.12 is to collect. The MBTA does not include a definition of an "active nest." However, the "Migratory Bird Permit Memorandum" issued by the USFWS in 2003 and updated in 2018 clarifies the MBTA in that regard and states that the removal of nests, without eggs or birds, is legal under the MBTA, provided no possession (which is interpreted as holding the nest with the intent of retaining it) occurs during the destruction (USFWS 2018).

***United States Army Corps of Engineers Jurisdiction.*** Areas meeting the regulatory definition of "waters of the United States" (jurisdictional waters) are subject to the jurisdiction of the United States Army Corps of Engineers (USACE) under provisions of Section 404 of the Clean Water Act (1972) and Section 10 of the Rivers and Harbors Act (1899). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and

flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as waters of the United States, tributaries of waters otherwise defined as waters of the United States, the territorial seas, and wetlands adjacent to waters of the United States (33 CFR part 328.3). Ditches and drainage canals where water flows intermittently or ephemerally are not regulated as waters of the United States. Wetlands on non-agricultural lands are identified using the *Corps of Engineers Wetlands Delineation Manual* and related Regional Supplement (USACE 1987 and 2008). Construction activities, including direct removal, filling, hydrologic disruption, or other means in jurisdictional waters are regulated by the USACE. The placement of dredged or fill material into such waters must comply with permit requirements of the USACE. No USACE permit will be effective in the absence of state water quality certification pursuant to Section 401 of the Clean Water Act. The State Water Resources Control Board is the state agency (together with the Regional Water Quality Control Boards) charged with implementing water quality certification in California.

# 2.0 Methods

## 2.1 Desktop Review

We obtained a USFWS species list for the Project as a framework for the evaluation and reconnaissance survey (USFWS 2020, Appendix A). In addition, we searched the California Natural Diversity Data Base (CDFW 2020, Appendix B) and the California Native Plant Society Inventory of Rare and Endangered Plants (CNPS 2020, Appendix C) for records of special-status plant and animal species from the vicinity of the Project site. Regional lists of special-status species were compiled using USFWS, CNDDB, and CNPS database searches confined to the Lemoore 7.5-minute United States Geological Survey (USGS) topographic quadrangle, which encompasses the Project site and the eight surrounding quadrangles (Burrel, Riverdale, Laton, Vanguard, Hanford, Westhaven, Stratford, and Guernsey). A local list of special-status species was compiled using CNDDB records from within 5 miles of the Project site. Species that lack a special-status designation by state or federal regulatory agencies or public interest groups were omitted from the final list. Species for which the Project site does not provide habitat were eliminated from further consideration. We also reviewed aerial imagery from Google Earth (Google 2020) and other sources, USGS topographic maps, the Web Soil Survey (NRCS 2020), and relevant literature.

## 2.2 Reconnaissance Survey

Colibri Senior Scientist Joshua Reece, Staff Scientist Malachi Whitford, and Field Scientist Rachel Lopez conducted a field reconnaissance survey of the Project site on 3 December 2020. The Project site and a 50-foot buffer surrounding the Project site were walked and thoroughly inspected to evaluate and document the potential for the area to support state- or federally protected resources. The survey area also included a 0.5-mile buffer around the Project site to evaluate the potential occurrence of nesting special-status raptors (Figure 3). The 0.5-mile buffer was surveyed by driving public roads and identifying the presence of large trees or other potentially suitable substrates for nesting raptors as well as open areas that could provide foraging habitat. The main survey area, including the Project site and surrounding 50-foot buffer, was evaluated for the presence of regulated habitats, including lakes, streams, and other waters using methods described in the *Wetlands Delineation Manual* and regional supplement (USACE 1987, 2008) and as defined by the CDFW (https://www.wildlife.ca.gov/conservation/lsa) and under the Porter-Cologne Water Quality Control Act. All plants except ornamentals and all animals (vertebrate wildlife species) observed in the survey area were identified and documented.

## 2.3 Significance Criteria

CEQA defines "significant effect on the environment" as "a substantial, or potentially substantial, adverse change in the environment" (Pub. Res. Code § 21068). Under CEQA Guidelines Section 15065, a Project's effects on biological resources are deemed significant where the Project would do the following:

a) Substantially reduce the habitat of a fish or wildlife species,
b) Cause a fish or wildlife population to drop below self-sustaining levels,
c) Threaten to eliminate a plant or animal community, or
d) Substantially reduce the number or restrict the range of a rare or endangered plant or animal.

In addition to the Section 15065 criteria, Appendix G within the CEQA Guidelines includes six additional impacts to consider when analyzing the effects of a project. Under Appendix G, a project's effects on biological resources are deemed significant where the project would do any of the following:

e) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS;

f) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS;

g) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

h) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

i) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

j) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

These criteria were used to determine whether the potential effects of the Project on biological resources qualify as significant.

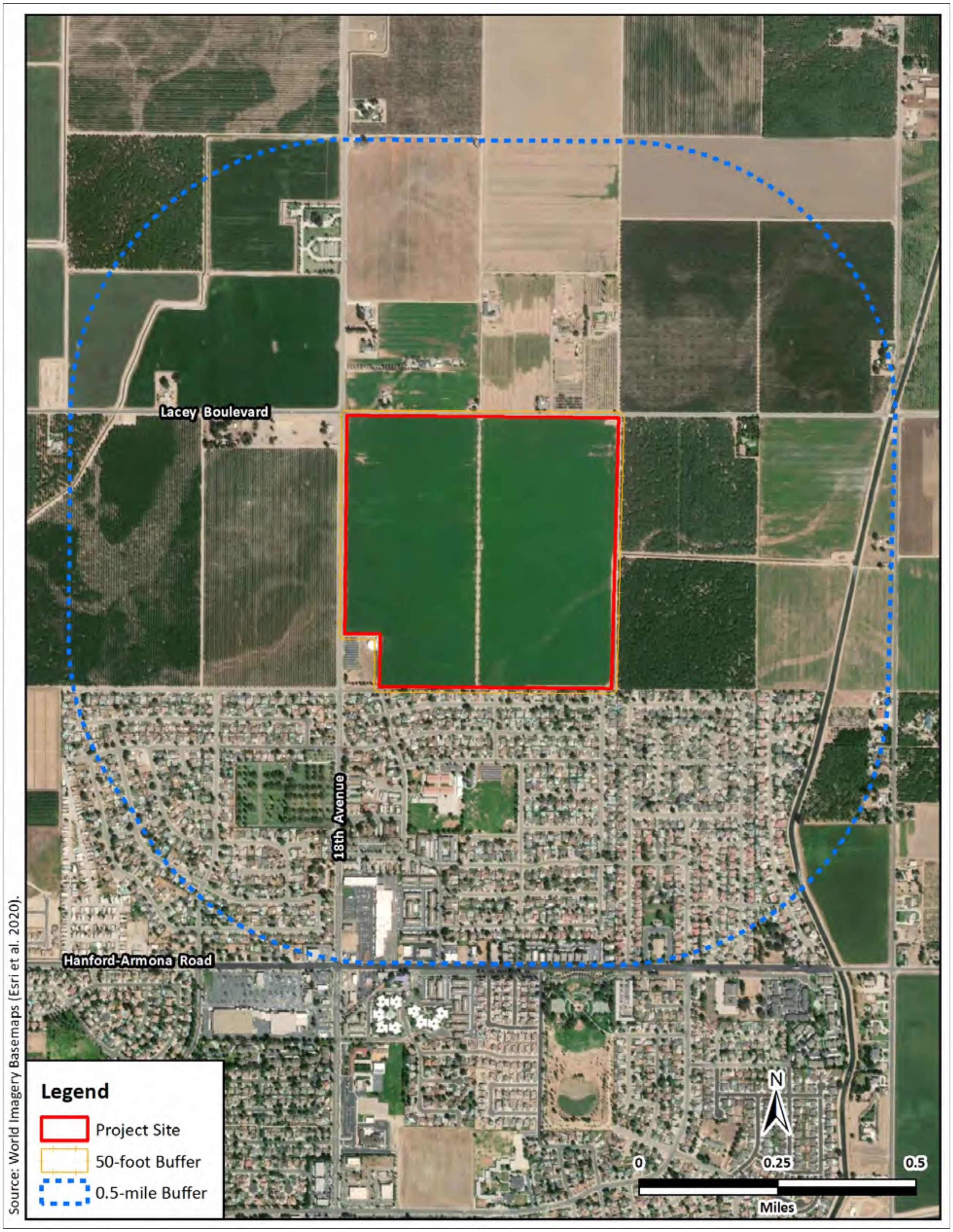


**Figure 3.** Reconnaissance survey area map.

# 3.0 Results

## 3.1 Desktop Review

The USFWS species list for the Project included nine species listed as threatened or endangered under the FESA (USFWS 2020, Table 1, Appendix A). None of those species could occur on or near the Project site due to either (1) the lack of habitat, (2) the Project site being outside the current range of the species, or (3) the presence of development that would otherwise preclude occurrence (Table 1). As identified in the species list, the Project site does not occur in USFWS-designated or proposed critical habitat for any species (USFWS 2020, Appendix A).

Searching the CNDDB for records of special-status species from the Lemoore 7.5-minute USGS topographic quadrangle and the eight surrounding quadrangles produced 78 records of 24 species (Table 1, Appendix B). Of those 24 species, four were not considered further because state or federal regulatory agencies or public interest groups do not recognize them through special designation (Appendix B). Of the remaining 20 species, four are known from within 5 miles of the Project site (Table 1, Figure 4). Of those four species, three are not expected to occur near the Project site due to either (1) the lack of habitat, (2) the Project site being outside the current range of the species, (3) their absence during the reconnaissance survey, or (4) a combination thereof. The remaining species, the state listed as threatened Swainson's hawk (*Buteo swainsoni*), is known to nest within 5 miles of the Project site and use alfalfa fields similar to those on the Project site as foraging habitat (Battistone et al. 2019). Therefore, the potential for this species to occur on or near the Project site is high.

Searching the CNPS Inventory of Rare and Endangered Plants of California yielded five taxa (CNPS 2020, Appendix C), four of which have a CRPR of 1B and one of which has a CRPR of 2B (Table 1). None of those species are expected to occur on or near the Project site due to the lack of habitat (Table 1).

The Project site is underlain by a mix of Nord complex and Whitewolf coarse sandy loam (NCRS 2020). It occupies flat and level terrain (0–1% slopes) at an elevation of 212–220 feet above mean sea level (Google 2020).

**Table 1.** Special-status species, their listing status, habitats, and potential to occur on or near the Project site.

| Species | Status | Habitat | Potential to Occur |
|---|---|---|---|
| **Federally and State Listed Endangered or Threatened Species** | | | |
| Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) | FT | Elderberry (*Sambucus* sp.) plants with stems > 1-inch diameter at ground level. | **None.** Habitat lacking; the Project site is outside the currently recognized range of this species. |
| Vernal pool fairy shrimp (*Branchinecta lynchi*) | FT | Vernal pools; some artificial depressions, ditches, stock ponds, vernal swales, ephemeral drainages, and seasonal wetlands. | **None.** Habitat lacking; no vernal pools or other potentially suitable aquatic features were found in the survey area. |
| Vernal pool tadpole shrimp (*Lepidurus packardi*) | FE | Vernal pools, clay flats, alkaline pools, and ephemeral stock tanks. | **None.** Habitat lacking; no vernal pools, alkaline pools, or ephemeral stock tanks were found in the survey area. |
| Delta smelt (*Hypomesus transpacificus*) | FT, SE | Estuarine habitat in Sacramento-San Joaquin River delta. | **None.** Habitat lacking; no connectivity to the aquatic habitat this species requires. |
| California red-legged frog (*Rana draytonii*) | FT, SSSC | Creeks, ponds, and marshes for breeding; small mammal burrows for upland cover. | **None.** Habitat lacking; the Project site is outside the current known range of this species. |
| Blunt-nosed leopard lizard (*Gambelia sila*) | FE, SE, FP | Upland scrub and sparsely vegetated grassland with small mammal burrows at 100–2400 feet elevation. | **None.** Habitat lacking; the Project site consists of agricultural land cover. |

| Species | Status | Habitat | Potential to Occur |
|---|---|---|---|
| Giant gartersnake (*Thamnophis gigas*) | FT, ST | Marshes, sloughs, ponds, or other permanent sources of water with emergent vegetation, and grassy banks or open areas during active season; uplands with underground refuges or crevices during inactive season. | **None.** Habitat lacking; no suitable aquatic resources in the survey area. |
| Swainson's hawk[3] (*Buteo swainsoni*) | ST | Large trees for nesting with adjacent grasslands, alfalfa fields, or grain fields for foraging. | **High.** Foraging habitat on the Project site and elsewhere in the survey area; potential nest trees within 0.5 miles. |
| Tricolored blackbird (*Agelaius tricolor*) | ST, SSSC | Large swaths of prickly, thorny, or emergent vegetation for nesting, with a nearby water source and grassland, pasture, or cattle feedlots for foraging. | **None.** Habitat lacking; no suitable upland or aquatic land cover in the survey area. |
| Western snowy plover (*Charadrius alexandrinus nivosus*) | FT, SSSC | Sandy beaches, salt pond levees, and shores of large alkali lakes. | **None.** Habitat lacking; no sandy beaches, salt pond levees, or alkali lakes in the survey area. |
| Fresno kangaroo rat (*Dipodomys nitratoides exilis*) | FE, SE | Sandy, alkaline, saline, and clay-based soils in upland scrub and grassland. | **None.** Habitat lacking; no upland scrub or grassland in the survey area. |

| Species | Status | Habitat | Potential to Occur |
|---|---|---|---|
| San Joaquin kit fox[3] (*Vulpes macrotis mutica*) | FE, ST | Grassland and upland scrub with a small mammal prey base. | **None.** Habitat lacking; no grassland or upland scrub in the survey area. |
| Tipton kangaroo rat[3] (*Dipodomys nitratoides nitratoides*) | FE, SE | Grassland and upland scrub with sparse to moderate shrub cover and saline soils; also fallowed agricultural fields. | **None.** Habitat lacking; no grassland, upland scrub, or fallowed agricultural fields in the survey area. |
| **State Species of Special Concern** | | | |
| Western spadefoot (*Spea hammondii*) | SSSC | Rain pools for breeding and small mammal burrows or other suitable refugia for nonbreeding upland cover. | **None.** Habitat lacking; no rain pools or other ephemeral water bodies were found in the survey area. |
| California glossy snake (*Arizona elegans occidentalis*) | SSSC | Arid scrub, rocky washes, grasslands, chapparal. | **None.** Habitat lacking; the Project site is outside the current known range of this species. |
| Northwestern pond turtle (*Actinemys marmorata*) | SSSC | Permanent or intermittent ponds, rivers, marshes, streams, and irrigation ditches, usually with aquatic vegetation and woody debris for basking and adjacent natural upland areas for egg laying. | **None.** Habitat lacking; no suitable permanent or intermittent water bodies in the survey area; the irrigation ditch bordering the southeast corner of the Project site is evidently routinely cleaned for weed abatement and lacks water for most of the year. |

| Species | Status | Habitat | Potential to Occur |
|---|---|---|---|
| Burrowing owl (*Athene cunicularia*) | SSSC | Grassland and upland scrub with friable soil; some agricultural or other developed and disturbed areas with ground squirrel burrows. | **None.** Habitat lacking; no suitable ground squirrel burrows in or near the survey area. |
| Yellow-headed blackbird (*Xanthocephalus xanthocephalus*) | SSSC | Freshwater marsh with emergent vegetation. | **None.** Habitat lacking; no freshwater marshes with emergent vegetation in the survey area. |
| **California Rare Plants** | | | |
| California alkali grass[3] (*Puccinellia simplex*) | 1B.2 | Scrub, meadows, seeps, grassland, vernal pools, saline flats, and mineral springs below 3000 feet elevation. | **None.** Habitat lacking; the Project site consisted of agricultural land cover. |
| Alkali-sink goldfields (*Lasthenia chrysantha*) | 1B.1 | Vernal pools and wet saline flats below 320 feet elevation. | **None.** Habitat lacking; no vernal pools or other ephemeral aquatic habitats in the survey area. |
| Brittlescale (*Atriplex depressa*) | 1B.2 | Alkaline or clay soils in chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools below 1000 feet elevation. | **None.** Habitat lacking; no suitable soils or vernal pools in the survey area. |
| Mud nama (*Nama stenocarpa*) | 2B.2 | Intermittently wet areas below 2700 feet elevation. | **None.** Habitat lacking; the Project site consisted of agricultural land cover. |

| Species | Status | Habitat | Potential to Occur |
|---|---|---|---|
| Panoche pepper-grass (*Lepidium jaredii* ssp. *album*) | 1B.2 | Alkaline soils in grassland, bottom lands, slopes, washes, and dry hillsides at 1640–2300 feet elevation. | **None.** Habitat lacking; the Project site is outside the known elevational range of this species. |
| Recurved larkspur (*Delphinium recurvatum*) | 1B.2 | Poorly drained, fine, alkaline soils in chenopod scrub, cismontane woodland, and valley and foothill grassland at 10–2800 feet elevation. | **None.** Habitat lacking; the Project site consisted of agricultural land cover. |

CDFW (2020), CNPS (2020), USFWS (2020).

| **Status[1]** | **Potential to Occur[2]** | |
|---|---|---|
| FE = Federally listed Endangered | None: | Species or sign not observed; conditions unsuitable for occurrence. |
| FT = Federally listed Threatened | Low: | Neither species nor sign observed; conditions marginal for occurrence. |
| FP = State Fully Protected | Moderate: | Neither species nor sign observed; conditions suitable for occurrence. |
| SE = State listed Endangered | High: | Neither species nor sign observed; conditions highly suitable for occurrence. |
| ST = State listed Threatened | Present: | Species or sign observed; conditions suitable for occurrence. |
| SSSC = State Species of Special Concern | | |

| **CNPS California Rare Plant Rank[1]:** | **Threat Ranks[1]:** |
|---|---|
| 1B – plants rare, threatened, or endangered in California and elsewhere. | 0.1 – seriously threatened in California (> 80% of occurrences). |
| 2B – plants rare, threatened, or endangered in California but more common elsewhere. | 0.2 – moderately threatened in California (20-80% of occurrences). |
| 3 – plants about which more information is needed. | 0.3 – not very threatened in California (<20% of occurrences). |
| 4 – plants have limited distribution in California. | |

[3]Record from within 5 miles of the Project site.

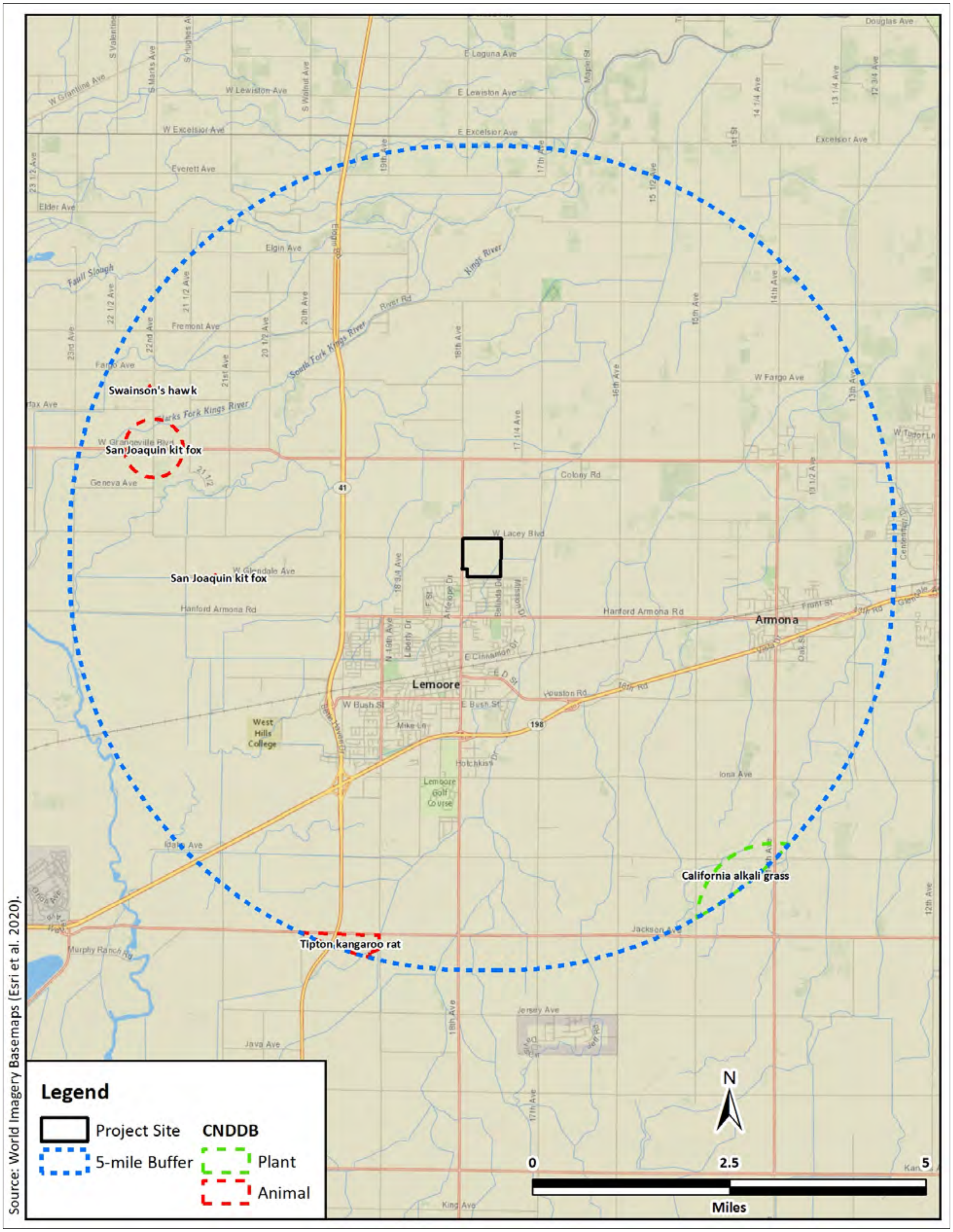


**Figure 4.** CNDDB occurrence map.

## 3.2 Reconnaissance Survey

### 3.2.1 Land Use and Habitats

The Project site supported a maintained alfalfa field (Figures 5 and 6). It was bordered by a walnut orchard to the east, mixed agricultural fields to the north and west (Figure 2), and a suburban development to the south (Figures 2 and 7). An unnamed irrigation ditch, which was dry at the time of the survey, bordered the southeast corner of the Project site (Figure 8). A slightly elevated dirt road running north-south bisected the Project site (Figure 9).

**Figure 5.** Photograph of the Project site, looking south along the west side of the Project site.

**Figure 6.** Photograph of the Project site, looking northeast from the southwest corner.

**Figure 7.** Photograph of the south side of the Project site, looking west, showing the adjacent residential area (left).

**Figure 8.** Photograph of the southeast corner of the Project site, looking east toward an adjacent irrigation ditch (right).

**Figure 9.** Photograph of the Project site, looking south from the northern border, showing a dirt road that bisects the Project site.

### 3.2.2 Plant and Animal Species Observed

A total of 26 plant species (5 native and 21 nonnative), 20 bird species, and two mammal species were observed during the survey (Table 2).

**Table 2.** Plant and animal species observed during the reconnaissance survey.

| Common Name | Scientific Name | Status |
|---|---|---|
| **Plants** | | |
| **Family Asteraceae** | | |
| Canada horseweed | *Erigeron canadensis* | Native |
| Common groundsel | *Senecio vulgaris* | Nonnative |
| Common sow thistle | *Sonchus oleraceus* | Nonnative |
| Flax-leaved horseweed | *Erigeron bonariensis* | Nonnative |
| Prickly lettuce | *Lactuca serriola* | Nonnative |
| Telegraph poleweed | *Heterotheca grandiflora* | Native |
| **Family Brassicaceae** | | |
| Black mustard | *Brassica nigra* | Nonnative |
| Lesser swine cress | *Lepidium didymum* | Nonnative |
| London rocket | *Sisymbrium irio* | Nonnative |
| Peppergrass | *Lepidium nitidum* | Native |
| Shepherd's purse | *Capsella bursa-pastoris* | Nonnative |
| **Family Caryophyllaceae** | | |
| Chickweed | *Stellaria media* | Nonnative |
| **Family Chenopodiaceae** | | |
| Nettle leaf goosefoot | *Chenopodium murale* | Nonnative |
| Russian thistle | *Salsola tragus* | Nonnative |
| **Family Convolvulaceae** | | |
| Field bindweed | *Convolvulus arvensis* | Nonnative |
| **Family Cucurbitaceae** | | |
| Dudaim melon | *Cucumis melo* | Nonnative |
| **Family Euphorbiaceae** | | |
| Turkey-mullein | *Croton setiger* | Native |
| **Family Fabaceae** | | |
| Alfalfa | *Medicago sativa* | Nonnative |
| **Family Malvaceae** | | |
| Cheeseweed | *Malva parviflora* | Nonnative |
| **Family Poaceae** | | |
| Bulbous bluegrass | *Poa bulbosa* | Nonnative |
| Johnsongrass | *Sorghum halepense* | Nonnative |
| Salt grass | *Distichlis spicata* | Native |
| **Family Polygonaceae** | | |

| Common Name | Scientific Name | Status |
|---|---|---|
| Sorrel | *Rumex* sp. | Nonnative |
| **Family Solanaceae** | | |
| Nightshade | *Solanum* sp. | Nonnative |
| **Family Urticaceae** | | |
| Dwarf nettle | *Urtica urens* | Nonnative |
| **Family Zygophyllaceae** | | |
| Puncture vine | *Tribulus terrestris* | Nonnative |
| **Birds** | | |
| **Family Accipitridae** | | |
| Northern harrier | *Circus hudsonius* | MBTA, CFGC |
| Red-tailed hawk | *Buteo jamaicensis* | MBTA, CFGC |
| **Family Cathartidae** | | |
| Turkey vulture | *Cathartes aura* | MBTA, CFGC |
| **Family Charadridae** | | |
| Killdeer | *Charadrius vociferus* | MBTA, CFGC |
| **Family Columbidae** | | |
| Mourning dove | *Zenaida macroura* | MBTA, CFGC |
| Eurasian collared-dove | *Streptopelia decaocto* | None |
| **Family Corvidae** | | |
| American crow | *Corvus brachyrhynchos* | MBTA, CFGC |
| California scrub-jay | *Aphelocoma californica* | MBTA, CFGC |
| Common raven | *Corvus corax* | MBTA, CFGC |
| **Family Fringillidae** | | |
| House finch | *Haemorhous mexicanus* | MBTA, CFGC |
| **Family Icteridae** | | |
| Western meadowlark | *Sturnella neglecta* | MBTA, CFGC |
| **Family Mimidae** | | |
| Northern mockingbird | *Mimus polyglottos* | MBTA, CFGC |
| **Family Parulidae** | | |
| Yellow-rumped warbler | *Setophaga coronata* | MBTA, CFGC |
| **Family Passerellidae** | | |
| Savannah sparrow | *Passerculus sandwichensis* | MBTA, CFGC |
| White-crowned sparrow | *Zonotrichia leucophrys* | MBTA, CFGC |
| **Family Regulidae** | | |
| Ruby-crowned kinglet | *Regulus calendula* | MBTA, CFGC |
| **Family Sturnidae** | | |
| European starling | *Sturnus vulgaris* | None |
| **Family Trochilidae** | | |
| Anna's hummingbird | *Calypte anna* | MBTA, CFGC |
| **Family Tyrannidae** | | |

| Common Name | Scientific Name | Status |
|---|---|---|
| Black phoebe | *Sayornis nigricans* | MBTA, CFGC |
| Say's phoebe | *Sayornis saya* | MBTA, CFGC |
| **Mammals** | | |
| **Family Canidae** | | |
| Coyote | *Canis latrans* | Native |
| **Family Geomyidae** | | |
| Botta's pocket gopher | *Thomomys bottae* | Native |

MBTA = Protected under the Migratory Bird Treaty Act (16 USC § 703 et seq.); CFGC = Protected under the California Fish and Game Code (FGC §§ 3503 and 3513)

### 3.2.3 Nesting Birds

Migratory birds could nest on or near the Project site. Such species include, but are not limited to, mourning dove (*Zenaida macroura*), red-tailed hawk (*Buteo jamaicensis*), and California scrub-jay (*Aphelocoma californica*).

### 3.2.4 Regulated Habitats

An unnamed irrigation ditch was within 50 feet of the southeastern corner of the Project site. This feature is likely under the regulatory jurisdiction of the SWRCB and the CDFW. The irrigation ditch is distributional from the Lemoore Canal to the east, which distributes water from the Kings River to the north. No wetlands or riparian habitats were found in the survey area.

## 3.3 Special-Status Species

### 3.3.1 Swainson's hawk (*Buteo swainsoni*) (ST)

Swainson's hawk is a state listed as threatened raptor in the family Accipitridae. Swainson's hawk is a gregarious, migratory, breeding resident of Central California where it uses open areas including grassland, sparse shrubland, pasture, open woodland, and annual agricultural fields such as grain and alfalfa to forage on small mammals, birds, and reptiles. After breeding, it eats mainly insects, especially grasshoppers (Bechard et al. 2020). Swainson's hawks build small to medium-sized nests in medium to large trees near foraging habitat. The nesting season begins in March or April in Central California when this species returns to its breeding grounds from wintering areas in Mexico and Central and South America. Nest building commences within one to two weeks of arrival to the breeding area and lasts about one week (Bechard et al. 2020). One to four eggs are laid and incubated for about 35 days. Young typically fledge in about 38–46 days and tend to leave the nest territory within 10 days of fledging (Bechard et al. 2020). Swainson's hawks depart for the non-breeding grounds between August and September.

One CNDDB record for Swainson's hawk from 2016 is known from within 5 miles of the Project site (CDFW 2020). No Swainson's hawks were observed during the reconnaissance survey.

However, Swainson's hawks may occur on the Project site as they are known to use alfalfa fields as foraging habitat, and trees suitable for nesting were within the 0.5-mile survey area around the Project site.  Therefore, this species is considered to have a high potential to occur on the Project site.

# 4.0 Environmental Impacts

## 4.1 Significance Determinations

This Project, which will result in temporary and permanent impacts to agricultural land cover, will not: (1) substantially reduce the habitat of a fish or wildlife species (criterion a) as no such habitat is present on the Project site; (2) cause a fish or wildlife population to drop below self-sustaining levels (criterion b) as no such potentially vulnerable population is known from the area; (3) threaten to eliminate a plant or animal community (criterion c) as no such potentially vulnerable communities are known from the area; (4) substantially reduce the number or restrict the range of a rare or endangered plant or animal (criterion d) as no such potentially vulnerable species are known from the area; (5) have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS (criterion f) as no riparian habitat or other sensitive natural community was present in the survey area; (6) have a substantial adverse effect on state or federally protected wetlands (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means (criterion g) as no impacts to wetlands will occur; (7) conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (criterion i) as no trees or biologically sensitive areas will be impacted; or (8) conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan (criterion j) as no such plan has been adopted. Thus, these significance criteria are not analyzed further.

The remaining statutorily defined criteria provided the framework for Criterion BIO1 and Criterion BIO2 below. These criteria are used to assess the impacts to biological resources stemming from the Project and provide the basis for determinations of significance:

- Criterion BIO1: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS (significance criterion e).

- Criterion BIO2: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites (significance criterion h).

### 4.1.1 Direct and Indirect Impacts

#### 4.1.1.1 Potential Impact: Have a substantial Effect on any Special-Status Species (Criterion BIO1)

The Project could adversely affect, either directly or through habitat modifications, one special-status animal that occurs or may occur on or near the Project site. Construction activities such as excavating, trenching, or using other heavy equipment that disturbs or harms a special-status species or substantially modifies its habitat could constitute a significant impact. We recommend that Mitigation Measures BIO1 and BIO2 (below) be included in the conditions of approval to reduce the potential impact to a less-than-significant level.

**Mitigation Measure BIO1. Protect nesting Swainson's hawks.**

1. To the extent practicable, construction shall be scheduled to avoid the Swainson's hawk nesting season, which extends from March through August.

2. If it is not possible to schedule construction between September and February, a qualified biologist shall conduct surveys for Swainson's hawk in accordance with the Swainson's Hawk Technical Advisory Committee's *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (SWTAC 2000, Appendix D). These methods require six surveys, three in each of the two survey periods, prior to project initiation. Surveys shall be conducted within a minimum 0.5-mile radius around the Project site. However, the survey radius shall be extended up to 10 miles from the Project site to identify the nearest nest, which will determine the habitat mitigation ratio (see Mitigation Measure BIO2 below). CDFW shall be consulted if an active nest is found within 0.5 miles of the Project site.

**Mitigation Measure BIO2. Compensate for loss of Swainson's hawk foraging habitat.**

Compensate for loss of Swainson's hawk foraging habitat in accordance with the CDFW *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (Buteo swainsoni) in the Central Valley of California* (CDFG 1994, Appendix E). The CDFW requires that projects adversely affecting Swainson's hawk foraging habitat provide Habitat Management (HM) Lands to the department. Projects within 1 mile of an active nest shall provide one acre of HM lands for each acre of development authorized (1:1 ratio). Projects within 5 miles of an active nest but greater than 1 mile from the nest shall provide 0.75 acres of HM lands for each acre of urban development authorized (0.75:1 ratio). And projects within 10 miles of an active nest but greater than 5 miles from an active nest shall provide 0.5 acres of HM lands for each acre of urban development authorized (0.5:1 ratio).

#### 4.1.1.2 Potential Impact: Interfere Substantially with Native Wildlife Movements, Corridors, or Nursery Sites (Criterion BIO2)

The Project could impede the use of nursery sites for native birds protected under the MBTA and CFGC. Migratory birds are expected to nest on and near the Project site. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance that causes nest abandonment or loss of reproductive effort can be considered take under the MBTA and CFGC. Loss of fertile eggs or nesting birds, or any activities resulting in nest abandonment, could constitute a significant effect if the species is particularly rare in the region. Construction activities such as excavating, trenching, and grading that disturb a nesting bird on the Project site or immediately adjacent to the construction zone could constitute a significant impact. We recommend that Mitigation Measure BIO3 (below) be included in the conditions of approval to reduce the potential effect to a less-than-significant level.

**Mitigation Measure BIO2. Protect nesting birds.**

1. To the extent practicable, construction shall be scheduled to avoid the nesting season, which extends from February through August.

2. If it is not possible to schedule construction between September and January, a pre-construction clearance survey for nesting birds shall be conducted by a qualified biologist to ensure that no active nests will be disturbed during Project construction. A pre-construction clearance survey shall be conducted no more than 14 days prior to the start of construction activities. During this survey, the qualified biologist shall inspect all potential nest substrates in and immediately adjacent to the impact areas, including within 250 feet in the case of raptor nests and within 100 feet for nests of all other birds. If an active nest is found close enough to the construction area to be disturbed by these activities, the qualified biologist shall determine the extent of a construction-free buffer to be established around the nest. If work cannot proceed without disturbing the nesting birds, work may need to be halted or redirected to other areas until nesting and fledging are completed or the nest has failed for non-construction related reasons.

### 4.1.2 Cumulative Effects

The Project will involve constructing a 156-acre residential development. Although all land within and adjacent to the Project site is disturbed by agricultural or residential development, the Project site still provides potential foraging and nesting habitat for migratory birds and foraging habitat for the state listed as threatened Swainson's hawk. However, implementing Mitigation

Measures BIO1 and BIO2 would reduce any contribution to cumulative impacts on biological resources to a less-than-significant level.

### 4.1.3 Unavoidable Significant Adverse Effects

No unavoidable significant adverse effects on biological resources would occur from implementing the Project.

# 5.0 Literature Cited


Battistone, C. L., B. J. Furnas, R. L. Anderson, J. L. Dinsdale, K. M. Cripe, J. A. Estep, C. S. Y. Chun, and S. G. Torres. 2019. Population and distribution of Swainson's Hawks (*Buteo swainsoni*) in California's great valley: a framework for long-term monitoring. Journal of Raptor Research 53 (3):253–265.

Bechard, M. J., C. S. Houston, J. H. Saransola, and A. S. England. 2020. Swainson's Hawk (*Buteo swainsoni*), version 1.0. In Birds of the World (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.swahaw.01

California Department of Fish and Game (CDFG). 1994. Staff Report Regarding Mitigation for Impacts to Swainson's Hawk (*Buteo swainsoni*) in the Central Valley of California. California Nongame Bird and Mammal Section Report #94.18.

California Department of Fish and Wildlife (CDFW). 2020. State and Federally Listed Endangered, Threatened, and Rare Plants of California. Biogeographic data branch, California Natural Diversity Data Base. https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data. Accessed 2 December 2020.

California Native Plant Society, Rare Plant Program (CNPS). 2020. Inventory of Rare and Endangered Plants (online edition, v8-03 0.39). California Native Plant Society, Sacramento, CA. http://www.rareplants.cnps.org. Accessed 2 December 2020.

Google. 2020. Google Earth Pro. Version 7.3.2.5776 (https://www.google.com/earth/download/gep/agree.html). Accessed 2 December 2020.

Natural Resources Conservation Service (NRCS), U.S. Department of Agriculture. 2020. Web Soil Survey, National Cooperative Soil Survey: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx. Accessed 4 December 2020.

Swainson's Hawk Technical Advisory Committee (SWTAC). 2000. Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley. 5 pages.

United States Army Corps of Engineers (USACE). 1987. Corps of Engineers Wetlands Delineation Manual. Wetland Research Program Technical Report Y-87-1.

________. 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). ERDC/EL TR-08-28. https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1046489.pdf. Accessed 4 December 2020.

Unites States Fish and Wildlife Service (USFWS). 2018. Migratory Bird Permit Memorandum: Destruction and Relocation of Migratory Bird Nest Contents. FWS/DMBM/AMB/068029, 4 pages.

________. 2020. IPaC: Information for Planning and Conservation. https://ecos.fws.gov/ipac/. Accessed 02 December 2020.

**Appendix A.** USFWS list of threatened and endangered species.

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: December 02, 2020
Consultation Code: 08ESMF00-2021-SLI-0462
Event Code: 08ESMF00-2021-E-01239
Project Name: Residential development project in Lemoore

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

# Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Sacramento Fish And Wildlife Office**
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

# Project Summary

Consultation Code: 08ESMF00-2021-SLI-0462

Event Code: 08ESMF00-2021-E-01239

Project Name: Residential development project in Lemoore

Project Type: DEVELOPMENT

Project Description: rezoning 156-acres from agricultural to 900 unit residential

Project Location:

Approximate location of the project can be viewed in Google Maps: [https://www.google.com/maps/place/36.32442652772303N119.77629398496958W](https://www.google.com/maps/place/36.32442652772303N119.77629398496958W)

Counties: Kings, CA

# Endangered Species Act Species

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## Mammals

| NAME | STATUS |
|---|---|
| Fresno Kangaroo Rat *Dipodomys nitratoides exilis*<br>There is **final** critical habitat for this species. Your location is outside the critical habitat.<br>Species profile: https://ecos.fws.gov/ecp/species/5150<br>Species survey guidelines:<br>https://ecos.fws.gov/ipac/guideline/survey/population/37/office/11420.pdf | Endangered |
| San Joaquin Kit Fox *Vulpes macrotis mutica*<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/2873 | Endangered |
| Tipton Kangaroo Rat *Dipodomys nitratoides nitratoides*<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/7247<br>Species survey guidelines:<br>https://ecos.fws.gov/ipac/guideline/survey/population/40/office/11420.pdf | Endangered |

## Reptiles

| NAME | STATUS |
| --- | --- |
| Blunt-nosed Leopard Lizard *Gambelia silus*<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/625 | Endangered |
| Giant Garter Snake *Thamnophis gigas*<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/4482 | Threatened |

## Amphibians

| NAME | STATUS |
| --- | --- |
| California Red-legged Frog *Rana draytonii*<br>There is **final** critical habitat for this species. Your location is outside the critical habitat.<br>Species profile: https://ecos.fws.gov/ecp/species/2891<br>Species survey guidelines:<br>https://ecos.fws.gov/ipac/guideline/survey/population/205/office/11420.pdf | Threatened |

## Fishes

| NAME | STATUS |
| --- | --- |
| Delta Smelt *Hypomesus transpacificus*<br>There is **final** critical habitat for this species. Your location is outside the critical habitat.<br>Species profile: https://ecos.fws.gov/ecp/species/321 | Threatened |

## Crustaceans

| NAME | STATUS |
| --- | --- |
| Vernal Pool Fairy Shrimp *Branchinecta lynchi*<br>There is **final** critical habitat for this species. Your location is outside the critical habitat.<br>Species profile: https://ecos.fws.gov/ecp/species/498 | Threatened |
| Vernal Pool Tadpole Shrimp *Lepidurus packardi*<br>There is **final** critical habitat for this species. Your location is outside the critical habitat.<br>Species profile: https://ecos.fws.gov/ecp/species/2246 | Endangered |

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

**Appendix B.** CNDDB occurrence records.

# Summary Table Report

## California Department of Fish and Wildlife

## California Natural Diversity Database

**Query Criteria:** Quad<span style='color:Red'> IS </span>(Burrel (3611948)<span style='color:Red'> OR </span>Riverdale (3611947)<span style='color:Red'> OR </span>Laton (3611946)<span style='color:Red'> OR </span>Vanguard (3611938)<span style='color:Red'> OR </span>Lemoore (3611937)<span style='color:Red'> OR </span>Hanford (3611936)<span style='color:Red'> OR </span>Westhaven (3611928)<span style='color:Red'> OR </span>Stratford (3611927)<span style='color:Red'> OR </span>Guernsey (3611926))<br /><span style='color:Red'> AND </span>Taxonomic Group<span style='color:Red'> IS </span>(Fish<span style='color:Red'> OR </span>Amphibians<span style='color:Red'> OR </span>Reptiles<span style='color:Red'> OR </span>Birds<span style='color:Red'> OR </span>Mammals<span style='color:Red'> OR </span>Mollusks<span style='color:Red'> OR </span>Arachnids<span style='color:Red'> OR </span>Crustaceans<span style='color:Red'> OR </span>Insects<span style='color:Red'> OR </span>Ferns<span style='color:Red'> OR </span>Gymnosperms<span style='color:Red'> OR </span>Monocots<span style='color:Red'> OR </span>Dicots<span style='color:Red'> OR </span>Lichens<span style='color:Red'> OR </span>Bryophytes)

| Name (Scientific/Common) | CNDDB Ranks | Listing Status (Fed/State) | Other Lists | Elev. Range (ft.) | Total EO's | Element Occ. Ranks | | | | | | Population Status | | Presence | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | A | B | C | D | X | U | Historic > 20 yr | Recent <= 20 yr | Extant | Poss. Extirp. | Extirp. |
| ***Agelaius tricolor***<br>tricolored blackbird | G2G3<br>S1S2 | None<br>Threatened | BLM_S-Sensitive<br>CDFW_SSC-Species of Special Concern<br>IUCN_EN-Endangered<br>NABCI_RWL-Red Watch List<br>USFWS_BCC-Birds of Conservation Concern | 216<br>225 | 955<br>S:3 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 1 | 3 | 0 | 0 |
| ***Arizona elegans occidentalis***<br>California glossy snake | G5T2<br>S2 | None<br>None | CDFW_SSC-Species of Special Concern | 250<br>250 | 260<br>S:1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 |
| ***Athene cunicularia***<br>burrowing owl | G4<br>S3 | None<br>None | BLM_S-Sensitive<br>CDFW_SSC-Species of Special Concern<br>IUCN_LC-Least Concern<br>USFWS_BCC-Birds of Conservation Concern | 212<br>235 | 2011<br>S:12 | 0 | 6 | 3 | 0 | 0 | 3 | 5 | 7 | 12 | 0 | 0 |
| ***Atriplex depressa***<br>brittlescale | G2<br>S2 | None<br>None | Rare Plant Rank - 1B.2 | | 60<br>S:1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 |
| ***Buteo swainsoni***<br>Swainson's hawk | G5<br>S3 | None<br>Threatened | BLM_S-Sensitive<br>IUCN_LC-Least Concern<br>USFWS_BCC-Birds of Conservation Concern | 200<br>230 | 2535<br>S:10 | 1 | 1 | 2 | 0 | 0 | 6 | 2 | 8 | 10 | 0 | 0 |
| ***Charadrius alexandrinus nivosus***<br>western snowy plover | G3T3<br>S2S3 | Threatened<br>None | CDFW_SSC-Species of Special Concern<br>NABCI_RWL-Red Watch List<br>USFWS_BCC-Birds of Conservation Concern | 210<br>210 | 138<br>S:1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 |
| ***Cicindela tranquebarica joaquinensis***<br>San Joaquin tiger beetle | G5T1<br>S1 | None<br>None | | 215<br>215 | 2<br>S:1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 |

| Name (Scientific/Common) | CNDDB Ranks | Listing Status (Fed/State) | Other Lists | Elev. Range (ft.) | Total EO's | Element Occ. Ranks A | B | C | D | X | U | Population Status Historic > 20 yr | Recent <= 20 yr | Presence Extant | Poss. Extirp. | Extirp. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Delphinium recurvatum***<br>recurved larkspur | G2?<br>S2? | None<br>None | Rare Plant Rank - 1B.2<br>BLM_S-Sensitive<br>SB_SBBG-Santa Barbara Botanic Garden | | 119<br>S:1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 |
| ***Desmocerus californicus dimorphus***<br>valley elderberry longhorn beetle | G3T2<br>S3 | Threatened<br>None | | 245<br>245 | 271<br>S:1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 |
| ***Dipodomys nitratoides exilis***<br>Fresno kangaroo rat | G3TH<br>SH | Endangered<br>Endangered | IUCN_VU-Vulnerable | 220<br>220 | 12<br>S:1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 |
| ***Dipodomys nitratoides nitratoides***<br>Tipton kangaroo rat | G3T1T2<br>S1S2 | Endangered<br>Endangered | IUCN_VU-Vulnerable | 215<br>215 | 79<br>S:3 | 0 | 1 | 0 | 0 | 0 | 2 | 2 | 1 | 3 | 0 | 0 |
| ***Emys marmorata***<br>western pond turtle | G3G4<br>S3 | None<br>None | BLM_S-Sensitive<br>CDFW_SSC-Species of Special Concern<br>IUCN_VU-Vulnerable<br>USFS_S-Sensitive | 200<br>215 | 1398<br>S:3 | 0 | 0 | 1 | 0 | 0 | 2 | 3 | 0 | 3 | 0 | 0 |
| ***Gambelia sila***<br>blunt-nosed leopard lizard | G1<br>S1 | Endangered<br>Endangered | CDFW_FP-Fully Protected<br>IUCN_EN-Endangered | 215<br>215 | 389<br>S:1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 |
| ***Gonidea angulata***<br>western ridged mussel | G3<br>S1S2 | None<br>None | | 202<br>202 | 157<br>S:1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 |
| ***Lasiurus cinereus***<br>hoary bat | G5<br>S4 | None<br>None | IUCN_LC-Least Concern<br>WBWG_M-Medium Priority | | 238<br>S:1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 |
| ***Lasthenia chrysantha***<br>alkali-sink goldfields | G2<br>S2 | None<br>None | Rare Plant Rank - 1B.1 | 255<br>255 | 55<br>S:2 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 0 |
| ***Lepidium jaredii ssp. album***<br>Panoche pepper-grass | G2G3T2T3<br>S2S3 | None<br>None | Rare Plant Rank - 1B.2<br>BLM_S-Sensitive<br>SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden | 220<br>220 | 60<br>S:1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 |
| ***Nama stenocarpa***<br>mud nama | G4G5<br>S1S2 | None<br>None | Rare Plant Rank - 2B.2 | 215<br>215 | 22<br>S:1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 |
| ***Nycticorax nycticorax***<br>black-crowned night heron | G5<br>S4 | None<br>None | IUCN_LC-Least Concern | 192<br>192 | 37<br>S:1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 |

# Summary Table Report

## California Department of Fish and Wildlife

## California Natural Diversity Database

| Name (Scientific/Common) | CNDDB Ranks | Listing Status (Fed/State) | Other Lists | Elev. Range (ft.) | Total EO's | Element Occ. Ranks | | | | | | Population Status | | Presence | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | A | B | C | D | X | U | Historic > 20 yr | Recent <= 20 yr | Extant | Poss. Extirp. | Extirp. |
| ***Puccinellia simplex***<br>California alkali grass | G3<br>S2 | None<br>None | Rare Plant Rank - 1B.2<br>BLM_S-Sensitive | 200<br>230 | 80<br>S:3 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 1 | 2 | 1 | 0 |
| ***Spea hammondii***<br>western spadefoot | G3<br>S3 | None<br>None | BLM_S-Sensitive<br>CDFW_SSC-Species of Special Concern<br>IUCN_NT-Near Threatened | 211<br>217 | 1409<br>S:6 | 0 | 0 | 6 | 0 | 0 | 0 | 6 | 0 | 6 | 0 | 0 |
| ***Thamnophis gigas***<br>giant gartersnake | G2<br>S2 | Threatened<br>Threatened | IUCN_VU-Vulnerable | 195<br>210 | 366<br>S:2 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 0 |
| ***Vulpes macrotis mutica***<br>San Joaquin kit fox | G4T2<br>S2 | Endangered<br>Threatened | | 200<br>260 | 1018<br>S:20 | 0 | 0 | 2 | 0 | 0 | 18 | 18 | 2 | 20 | 0 | 0 |
| ***Xanthocephalus xanthocephalus***<br>yellow-headed blackbird | G5<br>S3 | None<br>None | CDFW_SSC-Species of Special Concern<br>IUCN_LC-Least Concern | 207<br>207 | 13<br>S:1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 |

**Appendix C.** CNPS plant list.

CNPS California Native Plant Society

Inventory of Rare and Endangered Plants

*The database used to provide updates to the Online Inventory is under construction. View updates and changes made since May 2019 here.

# Plant List

**5** matches found. *Click on scientific name for details*

**Search Criteria**

California Rare Plant Rank is one of [1B, 2B], Found in Quads 3611948, 3611947, 3611946, 3611938, 3611937, 3611936, 3611928 3611927 and 3611926;

Modify Search Criteria Export to Excel Modify Columns Modify Sort Display Photos

| Scientific Name | Common Name | Family | Lifeform | Blooming Period | CA Rare Plant Rank | State Rank | Global Rank |
|---|---|---|---|---|---|---|---|
| Atriplex depressa | brittlescale | Chenopodiaceae | annual herb | Apr-Oct | 1B.2 | S2 | G2 |
| Delphinium recurvatum | recurved larkspur | Ranunculaceae | perennial herb | Mar-Jun | 1B.2 | S2? | G2? |
| Lepidium jaredii ssp. album | Panoche pepper-grass | Brassicaceae | annual herb | Feb-Jun | 1B.2 | S2S3 | G2G3T2T3 |
| Nama stenocarpa | mud nama | Namaceae | annual / perennial herb | Jan-Jul | 2B.2 | S1S2 | G4G5 |
| Puccinellia simplex | California alkali grass | Poaceae | annual herb | Mar-May | 1B.2 | S2 | G3 |

**Suggested Citation**

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- About the Rare Plant Program
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**Contributors**
- The Calflora Database
- The California Lichen Society
- California Natural Diversity Database
- The Jepson Flora Project
- The Consortium of California Herbaria
- CalPhotos

**Questions and Comments**

rareplants@cnps.org

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**Appendix D.** Recommended timing and methodology for Swainson's hawk nesting surveys in California's Central Valley.

# RECOMMENDED TIMING AND METHODOLOGY FOR SWAINSON'S HAWK NESTING SURVEYS IN CALIFORNIA'S CENTRAL VALLEY

**Swainson's Hawk Technical Advisory Committee**

**May 31, 2000**

This set of survey recommendations was developed by the Swainson's Hawk Technical Advisory Committee (TAC) to maximize the potential for locating nesting Swainson's hawks, and thus reducing the potential for nest failures as a result of project activities/disturbances. The combination of appropriate surveys, risk analysis, and monitoring has been determined to be very effective in reducing the potential for project-induced nest failures. As with most species, when the surveyor is in the right place at the right time, Swainson's hawks may be easy to observe; but some nest sites may be very difficult to locate, and even the most experienced surveyors have missed nests, nesting pairs, mis-identified a hawk in a nest, or believed incorrectly that a nest had failed. There is no substitute for specific Swainson's hawk survey experience and acquiring the correct search image.

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## METHODOLOGY

Surveys should be conducted in a manner that maximizes the potential to observe the adult Swainson's hawks, as well as the nest/chicks second. To meet the California Department of Fish and Game's (CDFG) recommendations for mitigation and protection of Swainson's hawks, surveys should be conducted for a ½ mile radius around all project activities, and if active nesting is identified within the ½ mile radius, consultation is required. In general, the TAC recommends this approach as well.

### Minimum Equipment

Minimum survey equipment includes a high-quality pair of binoculars and a high quality spotting scope. Surveying even the smallest project area will take hours, and poor optics often result in eye-strain and difficulty distinguishing details in vegetation and subject birds. Other equipment includes good maps, GPS units, flagging, and notebooks.

### Walking vs Driving

Driving (car or boat) or "windshield surveys" are usually preferred to walking if an adequate roadway is available through or around the project site. While driving, the observer can typically approach much closer to a hawk without causing it to fly. Although it might appear that a flying bird is more visible, they often fly away from the observer using trees as screens; and it is difficult to determine from where a flying bird came. Walking surveys are useful in locating a nest after a nest territory is identified, or when driving is not an option.

### Angle and Distance to the Tree

Surveying subject trees from multiple angles will greatly increase the observer's chance of detecting a nest or hawk, especially after trees are fully leafed and when surveying multiple trees

in close proximity. When surveying from an access road, survey in both directions. Maintaining a distance of 50 meters to 200 meters from subject trees is optimal for observing perched and flying hawks without greatly reducing the chance of detecting a nest/young: Once a nesting territory is identified, a closer inspection may be required to locate the nest.

**Speed**

Travel at a speed that allows for a thorough inspection of a potential nest site. Survey speeds should not exceed 5 miles per hour to the greatest extent possible. If the surveyor must travel faster than 5 miles per hour, stop frequently to scan subject trees.

**Visual and Aural Ques**

Surveys will be focused on both observations and vocalizations. Observations of nests, perched adults, displaying adults, and chicks during the nesting season are all indicators of nesting Swainson's hawks. In addition, vocalizations are extremely helpful in locating nesting territories. Vocal communication between. hawks is frequent during territorial displays; during courtship and mating; through the nesting period as mates notify each other that food is available or that a threat exists; and as older chicks and fledglings beg for food.

**Distractions**

Minimize distractions while surveying. Although two pairs of eyes may be better than one pair at times, conversation may limit focus. Radios should be off, not only are they distracting, they may cover a hawk's call.

**Notes and Species Observed**

Take thorough field notes. Detailed notes and maps of the location of observed Swainson's hawk nests are essential for filling gaps in the Natural Diversity Data Base; please report all observed nest sites. Also document the occurrence of nesting great homed owls, red-tailed hawks, red-shouldered hawks and other potentially competitive species. These species will infrequently nest within 100 yards of each other, so the presence of one species will not necessarily exclude another.

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## TIMING

To meet **the minimum level** of protection for the species, surveys should be completed for **at least** the two survey periods immediately prior to a project's initiation. For example, if a project is scheduled to begin on June 20, you should complete 3 surveys in Period III and 3 surveys in Period V. However, it is always recommended that surveys be completed in Periods II, III and V. **Surveys should not be conducted in Period IV.**

The survey periods are defined by the timing of migration, courtship, and nesting in a "typical" year for the majority of Swainson's hawks from San Joaquin County to Northern Yolo County. Dates should be adjusted in consideration of early and late nesting seasons, and geographic differences (northern nesters tend to nest slightly later, etc). If you are not sure, contact a TAC . member or CDFG biologist.

| Survey dates<br>Justification and search image | Survey time | Number of Surveys |
|---|---|---|
| I. *January-March 20 (recommended optional)* | *All day* | *1* |

Prior to Swainson's hawks returning, it may be helpful to survey the project site to determine potential nest locations. Most nests are easily observed from relatively long distances, giving the surveyor the opportunity to identify potential nest sites, as well as becoming familiar with the project area. It also gives the surveyor the opportunity to locate and map competing species nest sites such as great homed owls from February on, and red-tailed hawks from March on. After March 1, surveyors are likely to observe Swainson's hawks staging in traditional nest territories.

| | | |
|---|---|---|
| II. *March 20 to April 5* | *Sunrise to 1000*<br>*1600 to sunset* | *3* |

Most Central Valley Swainson's hawks return by April 1, and immediately begin occupying their traditional nest territories. For those few that do not return by April 1, there are often hawks ("floaters") that act as place-holders in traditional nest sites; they are birds that do not have mates, but temporarily attach themselves to traditional territories and/or one of the site's "owners." Floaters are usually displaced by the territories' owner(s) if the owner returns.

Most trees are leafless and are relatively transparent; it is easy to observe old nests, staging birds, and competing species. The hawks are usually in their territories during the survey hours, but typically soaring and foraging in the mid-day hours. Swainson's hawks may often be observed involved in territorial and courtship displays, and circling the nest territory. Potential nest sites identified by the observation of staging Swainson's hawks will usually be active territories during that season, although the pair may not successfully nest/reproduce that year.

| | | |
|---|---|---|
| III. *April 5 to April 20* | *Sunrise to 1200*<br>*1630 to Sunset* | ***3*** |

Although trees are much less transparent at this time, 'activity at the nest site increases significantly. Both males and females are actively nest building, visiting their selected site frequently. Territorial and courtship displays are increased, as is copulation. The birds tend to vocalize often, and nest locations are most easily identified. This period may require a great deal of "sit and watch" surveying.

| | | |
|---|---|---|
| IV. *April 21 to June 10* | *Monitoring known nest sites only*<br>***Initiating Surveys is not recommended*** | |

Nests are extremely difficult to locate this time of year, and even the most experienced surveyor will miss them, especially if the previous surveys have not been done. During this phase of nesting, the female Swainson's hawk is in brood position, very low in the nest, laying eggs, incubating, or protecting the newly hatched and vulnerable chicks; her head may or may not be visible. Nests are often well-hidden, built into heavily vegetated sections of trees or in clumps of mistletoe, making them all but invisible. Trees are usually not viewable from all angles, which may make nest observation impossible.

Following the male to the nest may be the only method to locate it, and the male will spend hours away from the nest foraging, soaring, and will generally avoid drawing attention to the nest site. Even if the observer is fortunate enough to see a male returning with food for the female, if the female determines it is not safe she will not call the male in, and he will not approach the nest; this may happen if the observer, or others, are too close to the nest or if other threats, such as rival hawks, are apparent to the female or male.

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**V.** ***June 10 to JuIy 30 (post-fledging)*** ***Sunrise to 1200*** ***3***
***1600 to sunset***

Young are active and visible, and relatively safe without parental protection. Both adults make numerous trips to the nest and are often soaring above, or perched near or on the nest tree. The location and construction of the nest may still limit visibility of the nest, young, ‘and adults.

# DETERMINING A PROJECT'S POTENTIAL
## FOR IMPACTING SWAINSON'S HAWKS

| LEVEL OF RISK | REPRODUCTIVE SUCCESS (Individuals) | LONGTERM SURVIVABILITY (Population) | NORMAL SITE CHARACTERISTICS (Daily Average) | NEST MONI-TORING |
|---|---|---|---|---|
| HIGH | Direct physical contact with the nest tree while the birds are on eggs or protecting young. (Helicopters in close proximity) | Loss of available foraging area.<br><br>Loss of nest trees. | Little human-created noise, little human use: nest is well away from dwellings, equipment yards, human access areas, etc.<br>*Do not include general cultivation practices in evaluation.* | MORE |
| | Loss of nest tree after nest building is begun prior to laying eggs. | Loss of potential nest trees. | | |
| | Personnel within 50 yards of nest tree (out of vehicles) for extended periods while birds are on eggs or protecting young that are < 10 days old. | Cumulative:<br>Multi-year, multi-site projects with substantial noise/personnel disturbance. | | |
| | Initiating construction activities (machinery and personnel) within 200 yards of the nest after eggs are laid and before young are > 10 days old. | Cumulative:<br>Single-season projects with substantial noise/personnel disturbance that is greater than or significantly different from the daily norm. | | |
| | Heavy machinery only working within 50 yards of nest. | | | |
| | Initiating construction activities within 200 yards of nest before nest building begins or after young > 10 days old. | | Substantial human-created noise and occurrence: nest is near roadways, well-used waterways, active airstrips, areas that have high human use.<br>*Do not include general cultivation practices in evaluation.* | |
| LOW | All project activities (personnel and machinery) greater than 200 yards from nest. | Cumulative:<br>Single-season projects with activities that "blend" well with site's "normal' activities. | | LESS |

**Appendix E.** Staff report regarding mitigation for impacts to Swainson's hawk (*Buteo swainsoni*) in the Central Valley of California.

Nongame Bird and Mammal Section Report # 94.18

State of California

# Memorandum

To : Div. Chiefs - IFD, BDD, NHD, WMD
Reg. Mgrs. - Regions 1, 2, 3, 4

Date : November 8, 1994

From : Department of Fish and Game

Subject : Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California

I am hereby transmitting the Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California for your use in reviewing projects (California Environmental Quality Act [CEQA] and others) and in developing 2081 Management Authorizations and 2090 Biological Opinions which may affect Swainson's hawk habitat in the Central Valley. The staff report has been developed during the last 18 months by the Environmental Services Division (ESD) in cooperation with the Wildlife Management Division (WMD) and Regions 1, 2, and 4. It has been sent out for public review on several occasions and redrafted as appropriate.

Either the mitigation measures in the staff report may be used or project specific measures may be developed. Alternative project specific mitigation measures proposed by the Department Divisions/Regions or by project sponsors will also be considered. However, such mitigation measures must be submitted to ESD for review. The review process will focus on the consistency of the proposed measure with Department, Fish and Game Commission, and legislative policy and with laws regarding raptors and listed species. ESD will coordinate project specific mitigation measure review with WMD.

If you have any questions regarding the report, please contact Mr. Ron Rempel, Program Supervisor, Habitat Conservation Planning and Endangered Species Permitting, Environmental Services Division at (916) 654-9980.

COPY Original signed by
A. Petrovich, Jr.
For
Boyd Gibbons
Direction

Enclosure

cc: Mr. Ron Rempel
Department of Fish and Game
Sacramento

file; d, exfile, esd, chron
Vouchilas/seh/pdl SRPBUTEO.DS1

**Staff Report regarding Mitigation**
**for Impacts to Swainson's Hawks (*Buteo swainsoni*)**
**in the Central Valley of California**

## INTRODUCTION

The Legislature and the Fish and Game Commission have developed the policies, standards and regulatory mandates which, if implemented, are intended to help stabilize and reverse dramatic population declines of threatened and endangered species. In order to determine how the Department of Fish and Game (Department) could judge the adequacy of mitigation measures designed to offset impacts to Swainson's hawks in the Central Valley, Staff (WMD, ESD and Regions) has prepared this report. To ensure compliance with legislative and Commission policy, mitigation requirements which are consistent with this report should be incorporated into: (1) Department comments to Lead Agencies and project sponsors pursuant to the California Environmental Quality Act (CEQA); (2) Fish and Game Code Section 2081 Management Authorizations (Management Authorizations); and (3) Fish and Game Code Section 2090 Consultations with State CEQA Lead Agencies.

The report is designed to provide the Department (including regional offices and divisions), CEQA Lead Agencies and project proponents the context in which the Environmental Services Division (ESD) will review proposed project specific mitigation measures. This report also includes "model" mitigation measures which have been judged to be consistent with policies, standards and legal mandates of the Legislature and Fish and Game Commission. Alternative mitigation measures, tailored to specific projects, may be developed if consistent with this report. Implementation of mitigation measures consistent with this report are intended to help achieve the conservation goals for the Swainson's hawk and should complement multi-species habitat conservation planning efforts currently underway.

The Department is preparing a recovery plan for the species and it is anticipated that this report will be revised to incorporate recovery plan goals. It is anticipated that the recovery plan will be completed by the end of 1995. The Swainson's hawk recovery plan will establish criteria for species recovery through preservation of existing habitat, population expansion into former habitat, recruitment of young into the population, and other specific recovery efforts.

During project review the Department should consider whether a proposed project will adversely affect suitable foraging habitat within a ten (10) mile radius of an active (used during one or more of the last 5 years) Swainson's hawk nest(s). Suitable Swainson's hawk foraging habitat will be those habitats and crops identified in Bechard (1983), Bloom (1980), and Estep (1989). The following vegetation types/agricultural crops are considered small mammal and insect foraging habitat for Swainson's hawks:

- alfalfa
- fallow fields
- beet, tomato, and other low-growing row or field crops
- dry-land and irrigated pasture

- rice land (when not flooded)
- cereal grain crops (including corn after harvest)

The ten mile radius standard is the flight distance between active (and successful) nest sites and suitable foraging habitats, as documented in telemetry studies (Estep 1989, Babcock 1993). Based on the ten mile radius, new development projects which adversely modify nesting and/or foraging habitat should mitigate the project's impacts to the species. The ten mile foraging radius recognizes a need to strike a balance between the biological needs of reproducing pairs (including eggs and nestlings) and the economic benefit of developments) consistent with Fish and Game Code Section 2053.

Since over 95% of Swainson's hawk nests occur on private land, the Department's mitigation program should include incentives that preserve agricultural lands used for the production of crops, which are compatible with Swainson's hawk foraging needs, while providing an opportunity for urban development and other changes in land use adjacent to existing urban areas.

## LEGAL STATUS

### Federal

The Swainson's hawk is a migratory bird species protected under the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in Section 50 of the Code of Federal Regulations (C.F.R.) Part 10, including feathers or other parts, nests, eggs or products, except as allowed by implementing regulations (50 C.F.R. 21).

### State

The Swainson's hawk has been listed as a threatened species by the California Fish and Game Commission pursuant to the California Endangered Species Act (CESA), see Title 14, California Code of Regulations, Section 670.5(b)(5)(A).

## LEGISLATIVE AND COMMISSION POLICIES, LEGAL MANDATES AND STANDARDS

The FGC policy for threatened species is, in part, to: "Protect and preserve all native species ... and their habitats...." This policy also directs the Department to work with all interested persons to protect and preserve sensitive resources and their habitats. Consistent with this policy and direction, the Department is enjoined to implement measures that assure protection for the Swainson's hawk.

The California State Legislature, when enacting the provisions of CESA, made the following findings and declarations in Fish and Game Code Section 2051:

a) "Certain species of fish, wildlife, and plants have been rendered extinct as a consequence of man's activities, untempered by adequate concern and conservation";

b) "Other species of fish, wildlife, and plants are in danger of, or threatened with, extinction because their habitats are threatened with destruction, adverse modification, or severe curtailment because of overexploitation, disease, predation, or other factors (emphasis added)";and

c) "These species of fish, wildlife, and plants are of ecological, educational, historical, recreational, esthetic, economic, and scientific value to the people of this state, and the conservation, protection, and enhancement of these species and their habitat is of statewide concern" (emphasis added).

The Legislature also proclaimed that it "is the policy of the state to conserve, protect, restore, and enhance any endangered or threatened species and its habitat and that it is the intent of the Legislature, consistent with conserving the species, to acquire lands for habitat for these species" (emphasis added).

Section 2053 of the Fish and Game Code states, in part, "it is the policy of the state that state agencies should not approve projects as proposed which would jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available consistent with conserving the species and or its habitat which would prevent jeopardy" (emphasis added).

Section 2054 states "The Legislature further finds and declares that, in the event specific economic, social, and or other conditions make infeasible such alternatives, individual projects may be approved if appropriate mitigation and enhancement measures are provided" (emphasis added).

Loss or alteration of foraging habitat or nest site disturbance which results in:

(1) nest abandonment; (2) loss of young; (3) reduced health and vigor of eggs and/or nestlings (resulting in reduced survival rates), may ultimately result in the take (killing) of nestling or fledgling Swainson's hawks incidental to otherwise lawful activities. The taking of Swainson's hawks in this manner can be, a violation of Section 2080 of the Fish and Game Code. This interpretation of take has been judicially affirmed by the landmark appellate court decision pertaining to CESA (DFG v. ACID, 8 CA App.4, 41554). The essence of the decision emphasized that the intent and purpose of CESA applies to all activities that take or kill endangered or threatened species, even when the taking is incidental to otherwise legal activities. To avoid potential violations of Fish and Game Code Section 2080, the Department recommends and encourages project sponsors to obtain 2081 Management Authorizations for their projects.

Although this report has been prepared to assist the Department in working with the development community, the prohibition against take (Fish and Game Code Section 2080) applies to all persons, including those engaged in agricultural activities and routine maintenance of facilities. In addition, sections 3503, 3503.5, and 3800 of the Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs.

To avoid potential violation of Fish and Game Code Section 2080 (i.e. killing of a listed species), project-related disturbance at active Swainson's hawk nesting sites should be reduced or eliminated during critical phases of the nesting cycle (March 1 - September 15 annually). Delineation of specific activities which could cause nest abandonment (take) of Swainson's hawk during the nesting period should be done on a case-by-case basis.

CEQA requires a mandatory findings of significance if a project's impacts to threatened or endangered species are likely to occur (Sections 21001 (c), 21083, Guidelines Sections 15380, 15064, 15065). Impacts must be avoided or mitigated to less than significant levels unless the CEQA Lead Agency makes and supports findings of Overriding Consideration. The CEQA Lead Agency's Findings of Overriding Consideration does not eliminate the project sponsor's obligation to comply with Fish and Game Code Section 2080.

## NATURAL HISTORY

The Swainson's hawk (Buteo swainsoni) is a large, broad winged buteo which frequents open country. They are about the same size as a red-tailed hawk (Buteo jatnaicensis), but trimmer, weighing approximately 800-1100 grams (1.75 - 2 lbs). They have about a 125 cm. (4+foot) wingspan. The basic body plumage may be highly variable and is characterized by several color morphs - light, dark, and rufous. In dark phase birds, the entire body of the bird may be sooty black. Adult birds generally have dark backs. The ventral or underneath sections may be light with a characteristic dark, wide "bib" from the lower throat down to the upper breast, light colored wing linings and pointed wing tips. The tail is gray ventrally with a subterminal dusky band, and narrow, less conspicuous barring proximally. The sexes are similar in appearance; females however, are slightly larger and heavier than males, as is the case in most sexually dimorphic raptors. There are no recognized subspecies (Palmer 1988).

The Swainson's hawk is a long distance migrator. The nesting grounds occur in northwestern Canada, the western U.S., and Mexico and most populations migrate to wintering grounds in the open pampas and agricultural areas of South America (Argentina, Uruguay, southern Brazil). The species is included among the group of birds known as "neotropical migrants". Some individuals or small groups (20-30 birds) may winter in the U.S., including California (Delta Islands). This round trip journey may exceed 14,000 miles. The birds return to the nesting grounds and establish nesting territories in early March.

Swainson's hawks are monogamous and remain so until the loss of a mate (Palmer 1988). Nest construction and courtship continues through April. The clutch (commonly 3-4 eggs) is generally laid in early April to early May, but may occur later. Incubation lasts 34-35 days, with both parents participating in the brooding of eggs and young. The young fledge (leave the nest) approximately 42-44 days after hatching and remain with their parents until they depart in the fall. Large groups (up to 100+ birds) may congregate in holding areas in the fall and may exhibit a delayed migration depending upon forage availability. The specific purpose of these congregation areas is as yet unknown, but is likely related to: increasing energy reserves for migration; the timing of migration; aggregation into larger migratory groups (including assisting the young in learning migration routes); and providing a pairing and courtship opportunity for unattached adults.

**Foraging Requirements**

Swainson's hawk nests in the Central Valley of California are generally found in scattered trees or along riparian systems adjacent to agricultural fields or pastures. These open fields and pastures are the primary foraging areas. Major prey items for Central Valley birds include: California voles (*Microtus californicus*), valley pocket gophers (*Thomomys bottae*), deer mice (*Peromyscus maniculatus*), California ground squirrels (*Spermophilus beecheyi*), mourning doves (*Zenaida macroura*), ring-necked pheasants (*Phasianus colchicus*), meadowlarks (*Sturnella neglecta*), other passerines, grasshoppers (*Conocephalinae sp*.), crickets (*Gryllidae sp*.), and beetles (Estep 1989). Swainson's hawks generally search for prey by soaring in open country and agricultural fields similar to northern hariers (*Circus cyaneus*) and ferruginous hawks (*Buteo regalis*). Often several hawks may be seen foraging together following tractors or other farm equipment capturing prey escaping from farming operations. During the breeding season, Swainson's hawks eat mainly vertebrates (small rodents and reptiles), whereas during migration vast numbers of insects are consumed (Palmer 1988).

Department funded research has documented the importance of suitable foraging habitats (e.g., annual grasslands, pasture lands, alfalfa and other hay crops, and combinations of hay, grain and row crops) within an energetically efficient flight distance from active Swainson's hawk nests (Estep pers. comm.). Recent telemetry studies to determine foraging requirements have shown that birds may use in excess of 15,000 acres of habitat or range up to 18.0 miles from the nest in search of prey (Estep 1989, Babcock 1993). The prey base (availability and abundance) for the species is highly variable from year to year, with major prey population (small mammals and insects) fluctuations occurring based on rainfall patterns, natural cycles and agricultural cropping and harvesting patterns. Based on these variables, significant acreages of potential foraging habitat (primarily agricultural lands) should be preserved per nesting pair (or aggregation of

nesting pairs) to avoid jeopardizing existing populations. Preserved foraging areas should be adequate to allow additional Swainson's hawk nesting pairs to successfully breed and use the foraging habitat during good prey production years.

Suitable foraging habitat is necessary to provide an adequate energy source for breeding adults, including support of nestlings and fledglings. Adults must achieve an energy balance between the needs of themselves and the demands of nestlings and fledglings, or the health and survival of both may be jeopardized. If prey resources are not sufficient, or if adults must hunt long distances from the nest site, the energetics of the foraging effort may result in reduced nestling vigor with an increased likelihood of disease and/or starvation. In more extreme cases, the breeding pair, in an effort to assure their own existence, may even abandon the nest and young (Woodbridge 1985).

Prey abundance and availability is determined by land and farming patterns including crop types, agricultural practices and harvesting regimes. Estep (1989) found that 73.4% of observed prey captures were in fields being harvested, disced, mowed, or irrigated. Preferred foraging habitats for Swainson's hawks include:

- alfalfa;
- fallow fields;
- beet, tomato, and other low-growing row or field crops;
- dry-land and irrigated pasture;
- rice land (during the non-flooded period); and
- cereal grain crops (including corn after harvest).

Unsuitable foraging habitat types include crops where prey species (even if present) are not available due to vegetation characteristics (e.g. vineyards, mature orchards, and cotton fields, dense vegetation).

**Nesting Requirements**

Although the Swainson's hawk's current nesting habitat is fragmented and unevenly distributed, Swainson's hawks nest throughout most of the Central Valley floor. More than 85% of the known nests in the Central Valley are within riparian systems in Sacramento, Sutter, Yolo, and San Joaquin counties. Much of the potential nesting habitat remaining in this area is in riparian forests, although isolated and roadside trees are also used. Nest sites are generally adjacent to or within easy flying distance to alfalfa or hay fields or other habitats or agricultural crops which provide an abundant and available prey source. Department research has shown that valley oaks (Quercus lobata), Fremont's cottonwood (Populus fremontii), willows (Salix spp.), sycamores (Platanus spp.), and walnuts (juglans spp.) are the preferred nest trees for Swainson's hawks (Bloom 1980, Schlorff and Bloom 1983, Estep 1989).

**Fall and Winter Migration Habitats**

During their annual fall and winter migration periods, Swainson's hawks may congregate in large groups (up to 100+ birds). Some of these sites may be used during delayed migration periods lasting up to three months. Such sites have been identified in Yolo, Tulare, Kern and San Joaquin counties and protection is needed for these critical foraging areas which support birds during their long migration.

**Historical and Current Population Status**

The Swainson's hawk was historically regarded as one of the most common and numerous raptor species in the state, so much so that they were often not given special mention in field notes. The breeding population has declined by an estimated 91% in California since the turn of the century (Bloom 1980). The historical Swainson's hawk population estimates are based on current densities and extrapolated based on the historical amount of available habitat. The historical population estimate is 4,284-17,136 pairs (Bloom 1980). In 1979, approximately 375 (± 50) breeding pairs of Swainson's hawks were estimated in California, and 280 (75%) of those pairs were estimated to be in the Central Valley (Bloom 1980). In 1988, 241 active breeding pairs were found in the Central Valley, with an additional 78 active pairs known in northeastern California. The 1989 population estimate was 430 pairs for the Central Valley and 550 pairs statewide (Estep, 1989). This difference in population estimates is probably a result of increased survey effort rather than an actual population increase.

**Reasons for decline**

The dramatic Swainson's hawk population decline has been attributed to loss of native nesting and foraging habitat, and more recently to the loss of suitable nesting trees and the conversion of agricultural lands. Agricultural lands have been converted to urban land uses and incompatible crops. In addition, pesticides, shooting, disturbance at the nest site, and impacts on wintering areas may have contributed to their decline. Although losses on the wintering areas in South America may occur, they are not considered significant since breeding populations outside of California are stable. The loss of nesting habitat within riparian areas has been accelerated by flood control practices and bank stabilization programs. Smith (1977) estimated that in 1850

over 770,000 acres of riparian habitat were present in the Sacramento Valley. By the mid-1980s, Warner and Hendrix (1984) estimated that there was only 120,000 acres of riparian habitat remaining in the Central Valley (Sacramento and San Joaquin Valleys combined). Based on Warner and Hendrix's estimates approximately 93% of the San Joaquin Valley and 73% of the Sacramento Valley riparian habitat has been eliminated since 1850.

## MANAGEMENT STRATEGIES

Management and mitigation strategies for the Central Valley population of the Swainson's hawk should ensure that:

- suitable nesting habitat continues to be available (this can be accomplished by protecting existing nesting habitat from destruction or disturbance and by increasing the number of suitable nest trees); and

- foraging habitat is available during the period of the year when Swainson's hawks are present in the Central Valley (this should be accomplished by maintaining or creating adequate and suitable foraging habitat in areas of existing and potential nest sites and along migratory routes within the state).

A key to the ultimate success in meeting the Legislature's goal of maintaining habitat sufficient to preserve this species is the implementation of these management strategies in cooperation with project sponsors and local, state and federal agencies.

## DEPARTMENT'S ROLES AND RESPONSIBILITIES IN PROJECT CONSULTATION AND ADMINISTRATION OF CEQA AND THE FISH AND GAME CODE

The Department, through its administration of the Fish and Game Code and its trust responsibilities, should continue its efforts to minimize further habitat destruction and should seek mitigation to offset unavoidable losses by (1) including the mitigation measures in this document in CEQA comment letters and/or as management conditions in Department issued Management Authorizations or (2) by developing project specific mitigation measures (consistent with the Commission's and the Legislature's mandates) and including them in CEQA comment letters and/or as management conditions in Fish and Game Code Section 2081 Management Authorizations issued by the Department and/or in Fish and Game Code Section 2090 Biological Opinions.

The Department should submit comments to CEQA Lead Agencies on all projects which adversely affect Swainson's hawks. CEQA requires a mandatory findings of significance if a project's impacts to threatened or endangered species are likely to occur (Sections 21001 fc), 21083. Guidelines 15380, 15064, 15065). Impacts must be: (1) avoided; or (2) appropriate mitigation must be provided to reduce impacts to less than significant levels; or (3) the lead agency must make and support findings of overriding consideration. If the CEQA Lead Agency makes a Finding of Overriding Consideration, it does not eliminate the project sponsor's obligation to comply with the take prohibitions of Fish and Game Code Section 2080. Activities

which result in (1) nest abandonment; (2) starvation of young; and/or (3) reduced health and vigor of eggs and nestlings may result in the take (killing) of Swainson's hawks incidental to otherwise lawful activities (urban development, recreational activities, agricultural practices, levee maintenance and similar activities. The taking of Swainson's hawk in this manner may be a violation of Section 2080 of the Fish and Game Code. To avoid potential violations of Fish and Game Code Section 2080, the Department should recommend and encourage project sponsors to obtain 2081 Management Authorizations.

In aggregate, the mitigation measures incorporated into CEQA comment letters and/or 2081 Management Authorizations for a project should be consistent with Section 2053 and 2054 of the Fish and Game Code. Section 2053 states, in part, "it is the policy of the state that state agencies should not approve projects as proposed which would jeopardize the continued existence of'any endangered or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available consistent with conserving the species and or its habitat which would prevent jeopardy" - Section 2054 states: "The Legislature further finds and declares that, in the event specific economic, social, and or other conditions make infeasible such alternatives, individual projects may be approved if appropriate mitigation and enhancement measures are provided."

State lead agencies are required to consult with the Department pursuant to Fish and Game Code Section 2090 to ensure that any action authorized, funded, or carried out by that state agency will not jeopardize the continued existence of any threatened or endangered species. Comment letters to State Lead Agencies should also include a reminder that the State Lead Agency has the responsibility to consult with the Department pursuant to Fish and Game Code Section 2090 and obtain a written findings (Biological Opinion). Mitigation measures included in Biological Opinions issued to State Lead Agencies must be consistent with Fish and Game Code Sections 2051-2054 and 2091-2092.

## NEST SITE AND HABITAT LOCATION INFORMATION SOURCES

The Department's Natural Diversity Data Base (NDDB) is a continually updated, computerized inventory of location information on the State's rarest plants, animals, and natural communities. Department personnel should encourage project proponents and CEQA Lead Agencies, either directly or through CEQA comment letters, to purchase NDDB products for information on the locations of Swainson's hawk nesting areas as well as other sensitive species. The Department's Nongame Bird and Mammal Program also maintains information on Swainson's hawk nesting areas and may be contacted for additional information on the species.

Project applicants and CEQA Lead Agencies may also need to conduct site specific surveys (conducted by qualified biologists at the appropriate time of the year using approved protocols) to determine the status (location of nest sites, foraging areas, etc.) of listed species as part of the CEQA and 2081 Management Authorization process. Since these studies may require multiple years to complete, the Department shall identify any needed studies at the earliest possible time in the project review process. To facilitate project review and reduce the potential for costly

project delays, the Department should make it a standard practice to advise developers or others planning projects that may impact one or more Swainson's hawk nesting or foraging areas to initiate communication with the Department as early as possible .

## MANAGEMENT CONDITIONS

Staff believes the following mitigation measures (nos. 1-4) are adequate to meet the Commission's and Legislature's policy regarding listed species and are considered as preapproved for incorporation into any Management Authorizations for the Swainson's hawk issued by the Department. The incorporation of measures 1-4 into a CEQA document should reduce a project's impact to a Swainson's hawk(s) to less than significant levels. Since these measures are Staff recommendations, a project sponsor or CEQA Lead agency may choose to negotiate project specific mitigation measures which differ. In such cases, the negotiated Management Conditions must be consistent with Commission and Legislative policy and be submitted to the ESD for review and approval prior to reaching agreement with the project sponsor or CEQA Lead Agency.

Staff recommended Management Conditions are:

1. No intensive new disturbances (e.g. heavy equipment operation associated with construction, use of cranes or draglines, new rock crushing activities) or other project related activities which may cause nest abandonment or forced fledging, should be initiated within 1/4 mile (buffer zone) of an active nest between March 1 - September 15 or until August 15 if a Management Authorization or Biological Opinion is obtained for the project. The buffer zone should be increased to ½ mile in nesting areas away from urban development (i.e. in areas where disturbance [e.g. heavy equipment operation associated with construction, use of cranes or draglines, new rock crushing activities] is not a normal occurrence during the nesting season). Nest trees should not be removed unless there is no feasible way of avoiding it. If a nest tree must be removed, a Management Authorization (including conditions to off-set the loss of the nest tree) must be obtained with the tree removal period specified in the Management Authorization, generally between October 1- February 1. If construction or other project related activities which may cause nest abandonment or forced fledging are necessary within the buffer zone, monitoring of the nest site (funded by the project sponsor) by a qualified biologist (to determine if the nest is abandoned) should be required . If it is abandoned and if the nestlings are still alive, the project sponsor shall fund the recovery and hacking (controlled release of captive reared young) of the nestling(s). Routine disturbances such as agricultural activities, commuter traffic, and routine facility maintenance activities within 1/4 mile of an active nest should not be prohibited.

2. Hacking as a substitute for avoidance of impacts during the nesting period may be used in unusual circumstances after review and approval of a hacking plan by ESD and WMD. Proponents who propose using hacking will be required to fund the full costs of the effort, including any telemetry work specified by the

Department.

3. To mitigate for the loss of foraging habitat (as specified in this document), the Management Authorization holder/project sponsor shall provide Habitat Management (HM) lands to the Department based on the following ratios:

(a) Projects within I mile of an active nest tree shall provide:

- one acre of HM land (at least 10% of the HM land requirements shall be met by fee title acquisition or a conservation easement allowing for the active management of the habitat, with the remaining 90% of the HM lands protected by a conservation easement [acceptable to the Department] on agricultural lands or other suitable habitats which provide foraging habitat for Swainson's hawk) for each acre of development authorized (1:1 ratio); or

- One-half acre of HM land (all of the HM land requirements shall be met by fee title acquisition or a conservation easement [acceptable to the Department) which allows for the active management of the habitat for prey production on-the HM lands) for each acre of development authorized (0.5:1 ratio).

(b) Projects within 5 miles of an active nest tree but greater than 1 mile from the nest tree shall plovide 0.75 acres of HM land for each acre of urban development authorized (0-75:1 ratio). All HM lands protected under this requirement may be protected through fee title acquisition or conservation easement (acceptable to the Department) on agricultural lands or other suitable habitats which provide foraging habitat for Swainson's hawk.

(c) Projects within 10 miles of an active nest tree but gleater than 5 miles from an active nest tree shall provide 0.5 acres of HM land for each acre of urban development authorized (0.5:1 ratio). All HM lands- protected under this requirement may be protected through fee title acquisition or a conservation easement (acceptable to the Department) on agricultural lands or other suitable habitats which provide foraging habitat for Swainson's hawk.

4. Management Authorization holders/project sponsors shall provide for the long-term management of the HM lands by funding a management endowment (the interest on which shall be used for managing the HM lands) at the rate of $400 per HM land acre (adjusted annually for inflation and varying interest rates).

Some project sponsors may desire to provide funds to the Department for HM land protection. This option is acceptable to the extent the proposal is consistent with Department policy regarding acceptance of funds for land acquisition. All HM lands should be located in areas which are consistent with a multi-species habitat conservation focus. Management

Authorization holders/project sponsors who are willing to establish a significant mitigation bank (> 900 acres) should be given special consideration such as 1.1 acres of mitigation credit for each acre preserved.

## PROJECT SPECIFIC MITIGATION MEASURES

Although this report includes recommended Management Measures, the Department should encourage project proponents to propose alternative mitigation strategies that provide equal or greater protection of the species and which also expedite project environmental review or issuance of a CESA Management Authorization. The Department and sponsor may choose to conduct cooperative, multi-year field studies to assess the site's habitat value and determine its use by nesting and foraging Swainson's hawk. Study plans should include clearly defined criteria for judging the project's impacts on Swainson's hawks and the methodologies (days of monitoring, foraging effort/efficiency, etc.) that will be used.

The study plans should be submitted to the Wildlife Management Division and ESD for review. Mitigation measures developed as a result of the study.must be reviewed by ESD (for consistency with the policies of the Legislature and Fish and Game Commission) and approved by the Director.

EXCEPTIONS

Cities, counties and project sponsors should be encouraged to focus development on open lands within already urbanized areas. Since small disjunct parcels of habitat seldom provide foraging habitat needed to sustain the reproductive effort of a Swainson's hawk pair, Staff does not recommend requiring mitigation pursuant to CEQA nor a Management Authorization by the Department for infill (within an already urbanized area) projects in areas which have less than 5 acres of foraging habitat and are surrounded by existing urban development, unless the project area is within 1/4 mile of an active nest tree.

## REVIEW

Staff should revise this report at least annually to determine if the proposed mitigation strategies should be retained, modified or if additional mitigation strategies should be included as a result of new scientific information.

## LITERATURE CITED

Babcock, K.W. 1993. Home range and habitat analysis of Swainson's hawks in West Sacramento. Michael Brandman Associates report prepared for the Southport Property Owner's Group, City of West Sacramento, CA. 21pp.

Bechard, M.J. 1983. Food supply and the occurrence of brood reduction in Swainson's Hawk. Wilson Bull. 95(2):233-242.

Bloom, P.H. 1980. The status of the Swainson's Hawk in California, 1979. Federal Aid in Wildlife Restoration, Project W-54-R-12, Nongame Wildl. Invest. job Final Report 11-8-0. 24p + appendix.

Estep, J.A. 1989. Biology, movements, and habitat relationships of the Swainson's Hawk in the Central Valley of California, 1986-87. Calif. Dept. Fish and Game, Nongame Bird and Mammal Section Report, 53pp.

Palmer, R.S. 1988a. Handbook of North American birds. Vol. 4: diurnal raptors (part 1). Yale Univ. Press, New Haven, CT.

Palmer, R.S. 1988b. Handbook of North American birds. Vol. 5: diurnal raptors (part 2). Yale Univ. Press, New Haven, CT.

Schlorff, R.W. and P.H. Bloom. 1983. Importance of riparian systems to nesting Swainson's Hawks in the Central Valley of California. pp 612-618. In: R.E Warner and K.M. Hendrix, (Eds.). 1984. California Riparian Systems. University of California Press, Berkeley.

Smith, F. 1977. Short review of the status of riparian forests in California. In: Stet, A. (Ed.). Riparian forests in California: Their ecology and conservation. Inst. of Ecology Pubi. 15. Univ. of Calif., Davis.

Warner, R.E. and K. M. Hendrix, Eds. 1984. California riparian systems; ecology, conservation, and productive management. University of California Press, Berkeley.

Woodbridge, B. 1985. Biology and management of Swainson's Hawk in Butte Valley, California. U.S. Forest Service Report, 19pp.

# APPENDIX E

## PHASE I SURVEY,
## LACEY RANCH PROJECT,
## LEMOORE, KINGS COUNTY, CALIFORNIA

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# MANAGEMENT SUMMARY

A Phase I cultural resources survey was conducted for the Lacey Ranch Project (Project). The Project study area totals approximately 156 acres and consists of Assessor's Parcel Number (APN) 021-030-057-000. It is located approximately 1 mile (mi.) north of the City of Lemoore in Section 35, Township 18 South, Range 20 East, Mount Diablo Base and Meridian (MDBM), Kings County, California. The Phase I survey included background research and an intensive pedestrian survey of the entire Project area. ASM Affiliates, Inc. conducted this study, with David S. Whitley, Ph.D., RPA, serving as principal investigator. The study was undertaken to assist with compliance with the California Environmental Protection Act. The City of Lemoore is the lead agency for the proposed Project.

A records search of site files and maps related to the Project area and a 0.5-mi. radius surrounding it was conducted on April 4, 2021 at the Southern San Joaquin Valley Archaeological Information Center, California State University, Bakersfield. The search results indicated that a very small portion of the Project area is adjacent to a prior linear survey but the parcel itself had not been surveyed and no cultural resources had been previously documented within the Project parcel. The search also indicated that no other previous projects have been conducted within the 0.5-mi. records search radius, but one cultural resource has been documented within the search radius, an historical canal segment.

The City of Lemoore conducted their required tribal outreach related to the proposed Project in 2020. ASM did not request a Sacred Lands File Request from the Native American Heritage Commission (NAHC) or engage in any additional outreach related to the Project.

The Phase I survey fieldwork was conducted on April 26, 2021. The entire 156-acre Project area was surveyed in parallel transects spaced at 15-meter intervals by a team of three archaeologists. No cultural resources of any kind were identified on the Project property.

The results of both the records search and intensive pedestrian survey conducted for the current study are negative and Project area exhibits low archaeological sensitivity. Development of the Lacey Ranch will not result in adverse impacts to significant or unique cultural resources. It is recommended, however, that an archaeologist be contacted in the unlikely event that cultural resources are uncovered during the development or use of the property, to evaluate the discovery.

# 1. INTRODUCTION AND REGULATORY CONTEXT

ASM Affiliates, Inc. was retained by Crawford & Bowen Planning, Inc. to conduct a Phase I cultural resources study for the Lacey Ranch Project, located in Kings County, California (Figure 1). The study was undertaken to assist with compliance with the California Environmental Protection Act (CEQA). The City of Lemoore is the lead agency for the proposed Project. The investigation was conducted, specifically, to ensure that significant impacts or adverse effects to historical resources do not occur as a result of project construction.

This current study included:

- A background records search and literature review to determine if any known cultural resources were present in the project zone and/or whether the area had been previously and systematically studied by archaeologists; and
- An on-foot, intensive inventory of the study area to identify and record previously undiscovered cultural resources.

David S. Whitley, Ph.D., RPA, served as principal investigator. ASM Associate Archaeologist Robert Azpitarte, B.A., led the fieldwork effort, with assistance in the field from ASM Assistant Archaeologists Stacey Escamilla, M.A., Maria Silva, B.A., and Maggie Lemos, B.A.

This document constitutes a report on the Phase I survey. Subsequent chapters provide background to the investigation, including historic context studies; the findings of the archival records search; Native American coordination; field methodology; and the fieldwork results. We conclude with management recommendations for the study area.

## 1.1 PROJECT LOCATION

The Project is located approximately 1-mi. north of the City of Lemoore, Kings County, California. It encompasses most of the northwest quarter of Section 35, Township 18 South, Range 20 East, MDBM, as illustrated on the USGS Lemoore, California 7.5-minute topographic quadrangle. The Project parcel lies on the open flats of the San Joaquin Valley. Elevation within the study area, which is flat, is approximately 230 feet (ft.) above mean sea level (amsl). The study area is an active alfalfa field that is bordered on the north by Lacey Boulevard, on the west by 18$^{th}$ Avenue, by residential development along the south boundary, and by active almond orchards on the east.

## 1.2 PROJECT AND STUDY AREA DESCRIPTION

The Project proposes the construction of a housing development and associated infrastructure on APN 021-030-057-000. This development will comprise a residential community with a mixture of single-family and multi-family housing units. Exact numbers may vary but there will be a maximum of 825 housing units in total. The Project includes a total of four parks for a total of 7.9 acres and 1.64 acres of trails. The survey study area totals approximately 156 acres and consists of all construction, staging, and lay-down areas for this Project.

## 1.3 REGULATORY CONTEXT

### 1.3.1 California Environmental Quality Act

CEQA is applicable to discretionary actions by state or local lead agencies. Under CEQA, lead agencies must analyze impacts to cultural resources. Significant impacts under CEQA occur when "historically significant" or "unique" cultural resources are adversely affected, which occurs when such resources could be altered or destroyed through project implementation. Historically significant cultural resources are defined by eligibility for or by listing in the California Register of Historical Resources (CRHR). In practice, the federal National Register of Historic Places (NRHP) criteria (below) for significance applied under Section 106 are generally (although not entirely) consistent with CRHR criteria (see PRC § 5024.1, Title 14 CCR, Section 4852 and § 15064.5(a)(3)).

Significant cultural resources are those archaeological resources and historical properties that:

(A) Are associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

(B) Are associated with the lives of persons important in our past;

(C) Embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values; or

(D) Have yielded, or may be likely to yield, information important in prehistory or history.

Unique resources under CEQA, in slight contrast, are those that represent:

> An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC § 21083.2(g)).

Preservation in place is the preferred approach under CEQA to mitigating adverse impacts to significant or unique cultural resources.

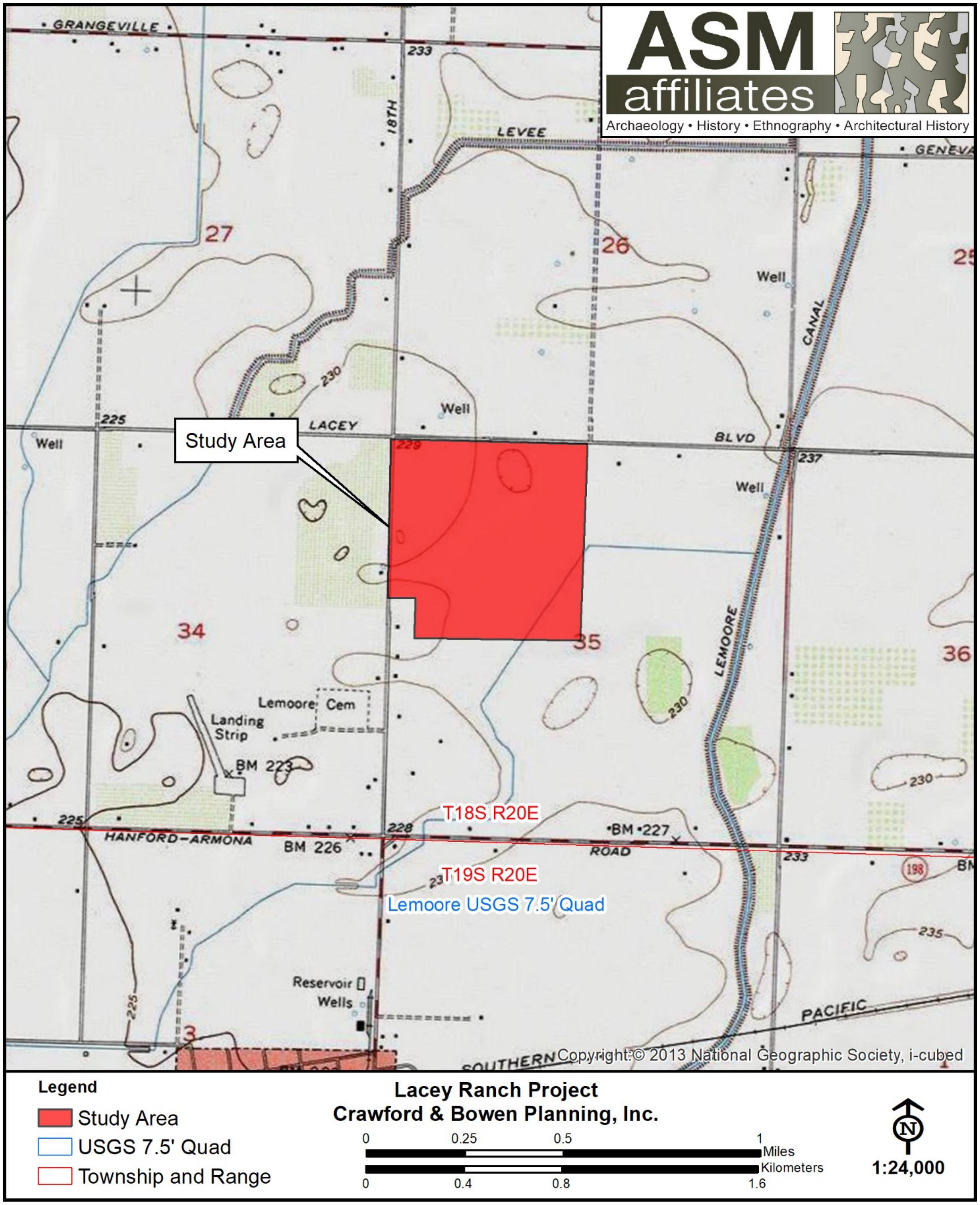



**Figure 1. Location of the Lacey Ranch Project, Kings County, California.**

# 2. ENVIRONMENTAL AND CULTURAL BACKGROUND

## 2.1 ENVIRONMENTAL BACKGROUND AND GEOARCHAEOLOGICAL SENSITIVITY

The study area is located at an elevation of 230 ft. amsl on the open flats of the San Joaquin Valley north of the City of Lemoore, Kings County, California. Currently this region can be characterized as a dry open valley bottom now utilized for suburban or agricultural uses. The study area is north of the former shoreline of Tulare Lake, at roughly 200 ft. amsl. Prior to reclamation and channelization, the region would have been a low-lying, water-rich area characterized by streams, sloughs, marshes, and swamps. Occasionally inundated by floodwaters, in many years portions of this region would have been swampy during the winter rainy season and marsh land during other parts of the year. Historical and recent land-use has changed the vegetation that was once present within and near the Project area. The immediate Project location historically most likely fell within the Valley Grassland community, however, with Riparian Woodlands present along streams and freshwater marshes common in the area (see Schoenherr 1992).

A Caltrans geoarchaeological study that included the Project area classified this location as having Low to Moderately Low sensitivity for subsurface sites (Meyer et al. 2010). This study involved first determining the location and ages of late Pleistocene (>25,000 years old) landforms in the southern San Joaquin Valley. These were identified by combining a synthesis of 2,400 published paleontological, soils, and archaeological chronometric dates with geoarchaeological field testing. The ages of surface landforms were then mapped to provide an assessment for the potential for buried archaeological deposits. These ages were derived primarily from the Soil Survey Geographic Database (SSURGO) and the State Soils Geographic (STATSGO) database. A series of maps were created from this information that ranked locations in seven ordinal classes for sensitivity for buried soils, from Very Low to Very High. Given its low sensitivity for buried deposits according to this analysis, it is therefore unlikely that the Project study area would contain subsurface archaeological deposits.

## 2.2 ETHNOGRAPHIC BACKGROUND

Penutian-speaking Yokuts tribal groups occupied the southern San Joaquin Valley region and much of the nearby Sierra Nevada. Ethnographic information about the Yokuts was collected primarily by Powers (1971, 1976 [originally 1877]), Kroeber (1925), Gayton (1930, 1948), Driver (1937), Latta (1977), and Harrington (n.d.). For a variety of historical reasons, existing research information emphasizes the central Yokuts tribes who occupied both the valley and particularly the foothills of the Sierra. The northernmost tribes suffered from the influx of Euro-Americans during the Gold Rush and their populations were in substantial decline by the time ethnographic studies began in the early twentieth century. In contrast, the southernmost tribes were partially removed by the Spanish to missions and eventually absorbed into multi-tribal communities on the Sebastian Indian Reservation (on Tejon Ranch), and later the Tule River Reservation and Santa Rosa Rancheria to the north. The result is an unfortunate scarcity of ethnographic detail on

southern Valley tribes, especially in relation to the rich information collected from the central foothills tribes where native speakers of the Yokuts dialects are still found. Regardless, the general details of indigenous life-ways were similar across the broad expanse of Yokuts territory, particularly in terms of environmentally influenced subsistence and adaptation and with regard to religion and belief, which were similar everywhere.

This scarcity of specific detail is particularly apparent in terms of southern valley tribal group distribution. Latta (1977) places the north shore of Tulare Lake east of Fish Slough in Nutúnutu territory, with the closest village being *Wiu* nearer the Mussel Slough inlet. Kroeber (1925:484), however, indicates that Nutúnutu territory did not include the north shore of Tulare Lake, but that the north shore, including Fish Slough, was Tachi territory. The village of *Wiu* (*Wiau* in Kroeber 1925) remains near the inlet of Cottonwood Creek and Mussel Slough.

The Yokuts settlement pattern was largely consistent, regardless of specific tribe involved. Winter villages were typically located along lakeshores and major stream courses (as these existed circa AD 1800), with dispersal phase family camps located at elevated spots on the valley floor and near gathering areas in the foothills.

Most Yokuts groups, again regardless of specific tribal affiliation, were organized as a recognized and distinct tribelet; a circumstance that almost certainly pertained to the tribal groups noted above. Tribelets were land-owning groups organized around a central village and linked by shared territory and descent from a common ancestor. The population of most tribelets ranged from about 150 to 500 peoples (Kroeber 1925).

Each tribelet was headed by a chief who was assisted by a variety of assistants, the most important of whom was the *winatum*, a herald or messenger and assistant chief. A shaman also served as religious officer. While shamans did not have any direct political authority, as Gayton (1930) has illustrated, they maintained substantial influence within their tribelet.

Shamanism is a religious system common to most Native American tribes. It involves a direct and personal relationship between the individual and the supernatural world enacted by entering a trance or hallucinatory state (usually based on the ingestion of psychotropic plants, such as jimsonweed or more typically native tobacco). Shamans were considered individuals with an unusual degree of supernatural power, serving as healers or curers, diviners, and controllers of natural phenomena (such as rain or thunder). Shamans also produced the rock art of this region, depicting the visions they experienced in vision quests believed to represent their spirit helpers and events in the supernatural realm (Whitley 1992, 2000).

The centrality of shamanism to the religious and spiritual life of the Yokuts was demonstrated by the role of shamans in the yearly ceremonial round. The ritual round, performed the same each year, started in the spring with the jimsonweed ceremony, followed by rattlesnake dance and (where appropriate) first salmon ceremony. After returning from seed camps, fall rituals began in the late summer with the mourning ceremony, followed by first seed and acorn rites and then bear dance (Gayton 1930:379). In each case, shamans served as ceremonial officials responsible for specific dances involving a display of their supernatural powers (Kroeber 1925).

Subsistence practices varied from tribelet to tribelet based on the environment of residence. Throughout Native California, and Yokuts territory in general, the acorn was a primary dietary component, along with a variety of gathered seeds. Valley tribes augmented this resource with lacustrine and riverine foods, especially fish and wildfowl. As with many Native California tribes, the settlement and subsistence rounds included the winter aggregation into a few large villages, where stored resources (like acorns) served as staples, followed by dispersal into smaller camps, often occupied by extended families, where seasonally available resources would be gathered and consumed.

Although population estimates vary and population size was greatly affected by the introduction of Euro-American diseases and social disruption, the Yokuts were one of the largest, most successful groups in Native California. Cook (1978) estimates that the Yokuts region contained 27 percent of the aboriginal population in the state at the time of contact; other estimates are even higher. Many Yokuts people continue to reside in the southern San Joaquin Valley today, including at the nearby Santa Rosa Rancheria.

## 2.3 PRE-CONTACT ARCHAEOLOGICAL BACKGROUND

The southern San Joaquin Valley region has received minimal archaeological attention compared to other areas of the state. In part, this is because the majority of California archaeological work has concentrated in the Sacramento Delta, Santa Barbara Channel, and central Mojave Desert areas (see Moratto 1984). Although knowledge of the region's prehistory is limited, enough is known to determine that the archaeological record is broadly similar to south-central California as a whole (see Gifford and Schenk 1926; Hewes 1941; Wedel 1941; Fenenga 1952; Elsasser 1962; Fredrickson and Grossman 1977; Schiffman and Garfinkel 1981). Based on these sources, the general prehistory of the region can be outlined as follows.

Initial occupation of the region occurred at least as early as the *Paleoindian Period*, or prior to about 10,000 years before present (YBP). Evidence of early use of the region is indicated by characteristic fluted and stemmed points found around the margin of Tulare Lake, in the foothills of the Sierra, and in the Mojave Desert proper.

Both fluted and stemmed points are particularly common around lake margins, suggesting a terminal Pleistocene/early Holocene lakeshore adaptation similar to that found throughout the far west at the same time; little else is known about these earliest peoples. Over 250 fluted points have been recovered from the Witt Site (CA-KIN-32), located along the western shoreline of ancient Tulare Lake south of the study area, demonstrating the importance of this early occupation in the San Joaquin Valley specifically (see Fenenga 1993). Additional finds consist of a Clovis-like projectile point discovered in a flash-flood cut-bank near White Oak Lodge in 1953 on Tejon Ranch (Glennan 1987a, 1987b). More recently, a similar fluted point was found near Bakersfield (Zimmerman et al. 1989), and a number are known from the Edwards Air Force Base and Boron area of the western Mojave Desert. Although human occupation of the state is well-established during the Late Pleistocene, relatively little can be inferred about the nature and distribution of this occupation with a few exceptions. First, little evidence exists to support the idea that people at that time were big-game hunters, similar to those found on the Great Plains. Second, the western Mojave Desert evidence suggests small, very mobile populations that left a minimal archaeological

signature. The evidence from the ancient Tulare Lake shore, in contrast, suggests much more substantial population and settlements which, instead of relying on big game hunting, were tied to the lacustrine lake edge. Variability in subsistence and settlement patterns is thus apparent in California, in contrast to the Great Plains.

Substantial evidence for human occupation across California, however, first occurs during the middle Holocene, roughly 7500 to 4000 YBP. This period is known as the *Early Horizon*, or alternatively as the Early Millingstone along the Santa Barbara Channel. In the south, populations concentrated along the coast with minimal visible use of inland areas. Adaptation emphasized hard seeds and nuts with tool-kits dominated by mullers and grindstones (manos and metates). Additionally, little evidence for Early Horizon occupation exists in most inland portions of the state, partly due to a severe cold and dry paleoclimatic period occurring at this time, although a site deposit dating to this age has been identified along the ancient Buena Vista shoreline in Kern County to the south (Rosenthal et al. 2007). Regardless of specifics, Early Horizon population density was low with a subsistence adaptation more likely tied to plant food gathering than hunting.

Environmental conditions improved dramatically after about 4000 YBP during the *Middle Horizon* (or Intermediate Period). This period is known climatically as the Holocene Maximum (circa 3,800 YBP) and was characterized by significantly warmer and wetter conditions than previously experienced. It was marked archaeologically by large population increase and radiation into new environments along coastal and interior south-central California and the Mojave Desert (Whitley 2000). In the Delta region to the north, this same period of favorable environmental conditions was characterized by the appearance of the Windmiller culture which exhibited a high degree of ritual elaboration (especially in burial practices) and perhaps even a rudimentary mound-building tradition (Meighan, personal communication, 1985). Along with ritual elaboration, Middle Horizon times experienced increasing subsistence specialization, perhaps correlating with the appearance of acorn processing technology. Penutian speaking peoples (including the Yokuts) are also posited to have entered the state roughly at the beginning of this period and, perhaps to have brought this technology with them (cf. Moratto 1984). Likewise, it appears the so-called "Shoshonean Wedge" in southern California, the Takic-speaking groups that include the Gabrielino/Fernandeño, Tataviam, and Kitanemuk, may have moved into the region at that time (Sutton 2009), rather than at about 1500 YBP as first suggested by Kroeber (1925).

Evidence for Middle Horizon occupation of interior south-central California is substantial. For example, in northern Los Angeles County along the upper Santa Clara River, to the south of the San Joaquin Valley, the Agua Dulce village complex indicates occupation extending back to the Intermediate Period, when the population of the village may have been 50 or more people (King et al. n.d.). Similarly, inhabitation of the Hathaway Ranch region near Lake Piru, and the Newhall Ranch near Valencia, appears to date to the Intermediate Period (W&S Consultants 1994). To the west, little or no evidence exists for pre-Middle Horizon occupation in the upper Sisquoc and Cuyama River drainages; populations first appear there at roughly 3,500 YBP (Horne 1981). The Carrizo Plain, the valley immediately west of the San Joaquin, experienced a major population expansion during the Middle Horizon (W&S Consultants 2004; Whitley et al. 2007), and recently collected data indicates the Tehachapi Mountains region was first significantly occupied during the Middle Horizon (W&S Consultants 2006). A parallel can be drawn to the inland Ventura County region where a similar pattern has been identified (Whitley and Beaudry 1991), as well as

the western Mojave Desert (Sutton 1988a, 1988b), the southern Sierra Nevada (W&S Consultants 1999), and the Coso Range region (Whitley et al. 1988). In all of these areas a major expansion in settlement, the establishment of large site complexes and an increase in the range of environments exploited appear to have occurred sometime roughly around 4,000 years ago. Although most efforts to explain this expansion have focused on local circumstances and events, it is increasingly apparent this was a major southern California-wide occurrence, and any explanation must be sought at a larger level of analysis (Whitley 2000). Additionally, evidence from the Carrizo Plain suggests the origins of the tribelet level of political organization developed during this period (W&S Consultants 2004; Whitley et al. 2007). Whether this same demographic process holds for the southern San Joaquin Valley, including the study area, is yet to be determined.

The beginning of the *Late Horizon* is set variously at 1500 and 800 YBP, with a growing archaeological consensus for the shorter chronology. Increasing evidence suggests the importance of the Middle-Late Horizons transition (AD 800 to 1200) in the understanding of south-central California prehistory. This corresponds to the so-called Medieval Climatic Anomaly, followed by the Little Ice Age, and this general period of climatic instability extended to about A.D. 1860. It included major droughts matched by intermittent “mega-floods,” and resulted in demographic disturbances across much of the west (Jones et al. 1999). It is believed to have resulted in major population decline and abandonments across south-central California, involving as much as 90 percent of the interior populations in some regions, including the Carrizo Plain (Whitley et al. 2007). It is not clear whether site abandonment was accompanied by a true reduction in population or an agglomeration of the same numbers of peoples into fewer but larger villages in more favorable locations. Population along the Santa Barbara coast appears to have spiked at about the same time that it collapsed on the Carrizo Plain (Whitley et al. 2007). Along Buena Vista Lake, in Kern County, population appears to have been increasingly concentrated towards the later end of the Medieval Climatic Anomaly (Culleton 2006), and population intensification also appears to have occurred in the well-watered Tehachapi Mountains during this same period (W&S Consultants 2006).

What is then clear is that Middle Period villages and settlements were widely dispersed across the south-central California landscape, including in the Sierras and the Mojave Desert. Many of these sites are found at locations that lack existing or known historical fresh water sources. Late Horizon sites, in contrast, are typically concentrated in areas where fresh water was available during the historical period, if not currently.

One extensively studied site that shows evidence of intensive occupation during the Middle-Late Horizons transition (~1500 to 500 YBP) is the Redtfeldt Mound (CA-KIN-66/H), located south of the current study area, near the north shore of ancient Tulare Lake. There, Siefkin (1999) reported on human burials and a host of artifacts and ecofacts excavated from a modest-sized mound. He found that both Middle Horizon and Middle-Late Horizons transition occupations were more intensive than Late Horizon occupations, which were sporadic and less intensive (Siefkin 1999:110-111).

The Late Horizon can then be understood as a period of recovery from a major demographic collapse. One result is the development of regional archaeological cultures as the precursors to

ethnographic Native California, suggesting that ethnographic life-ways recorded by anthropologists extend roughly 800 years into the past.

The position of southern San Joaquin Valley prehistory relative to patterns seen in surrounding areas is still somewhat unknown. The presence of large lake systems in the valley bottoms appears to have mediated some of the desiccation seen elsewhere. But, as the reconstruction of Soda Lake in the nearby Carrizo Plain demonstrates (see Whitley et al. 2007) environmental perturbations had serious impacts on lake systems too. Identifying certain of the prehistoric demographic trends for the southern San Joaquin Valley and determining how these trends (if present) correlate with those seen elsewhere is a current important research objective.

# 2.4 HISTORICAL BACKGROUND

Spanish explorers first visited the San Joaquin Valley in 1772, but its lengthy distance from the missions and presidios along the Pacific Coast delayed permanent settlement for many years, including during the Mexican period of control over the Californian region. In the 1840s, Mexican rancho owners along the Pacific Coast allowed their cattle to wander and graze in the San Joaquin Valley (JRP Historical Consulting 2009). The Mexican government granted the first ranchos in the southern part of the San Joaquin Valley in the early 1840s, but these did not result in permanent settlement. It was not until the annexation of California in 1848 that the exploitation of the southern San Joaquin Valley began (Pacific Legacy 2006).

In the 1840s, Mexican rancho owners along the Pacific Coast allowed their cattle to wander and graze in the San Joaquin Valley (JRP Historical Consulting 2009). But the Mexican government did not grant ranchos in the San Joaquin Valley until the early 1840s, and even then these did not result in significant permanent settlement. The *Laguna de Tache Rancho* was granted by Governor Pio Pico in 1846 to Manuel de Jesus Castro, a former captain in the Mexican army. The rancho extended for 26 mi. down the north bank of the Kings River from modern Kingsburg to approximately Riverdale. It was sometimes called the "River Ranch." Castro's ownership of the Laguna de Tache Rancho grant was confirmed by the U.S. Public Land Commission in 1866, at which point it was sold to Jeremiah Clark.

The discovery of gold in northern California in 1848 resulted in a dramatic increase of population, consisting in good part of fortune seekers and gold miners, who began to scour other parts of the state. After 1851, when gold was discovered in the Sierra Nevada Mountains in eastern Kern County, the population of the area grew rapidly. Some new immigrants began ranching in the San Joaquin Valley to supply the miners and mining towns. Ranchers grazed cattle and sheep, and farmers dry-farmed or used limited irrigation to grow grain crops, leading to the creation of small agricultural communities throughout the valley (JRP Historical Consulting 2009).

After the American annexation of California, the southern San Joaquin Valley became significant as a center of food production for this new influx of people in California. The expansive unfenced and principally public foothill spaces were well suited for grazing both sheep and cattle (Boyd 1997). As the Sierra Nevada gold rush presented extensive financial opportunities, ranchers introduced new breeds of livestock, consisting of cattle, sheep, and pigs (Boyd 1997).

With the increase of ranching in the southern San Joaquin came the dramatic change in the landscape, as non-native grasses more beneficial for grazing and pasture replaced native flora (Preston 1981). After the passing of the Arkansas Act in 1850, efforts were made to reclaim small tracts of land in order to create more usable spaces for ranching. Eventually, as farming supplanted ranching as a more profitable enterprise, large tracts of land began to be reclaimed for agricultural use, aided in part by the extension of the railroad in the 1870s (Pacific Legacy 2006).

Following the passage of statewide 'No-Fence' laws in 1874, ranching practices began to decline, while farming expanded in the San Joaquin Valley in both large land holdings and smaller, subdivided properties. As the farming population grew, so did the demand for irrigation. Settlers began reclamation of swampland in 1866, and built small dams across the Kern River to divert water into the fields. By 1880, 86 different groups were taking water from the Kern River. Ten years later, 15 major canals provided water to thousands of acres in Kern County.

During the period of reclaiming unproductive land in the southern San Joaquin Valley, grants were given to individuals who had both the resources and the finances to undertake the operation alone. One small agricultural settlement, founded by Colonel Thomas Baker in 1861 after procuring one such grant, took advantage of reclaimed swampland along the Kern River. This settlement became the City of Bakersfield in 1869, and quickly became the center of activity in the southern San Joaquin Valley, and in the newly formed Kern County. Located on the main stage road through the San Joaquin Valley, the town became a primary market and transportation hub for stock and crops, as well as a popular stopping point for travelers on the Los Angeles and Stockton Road. The Southern Pacific Railroad (SPRR) reached the Bakersfield area in 1873, connecting it with important market towns elsewhere in the state, dramatically impacting both agriculture and oil production (Pacific Legacy 2006).

Three competing partnerships developed during this period which had a great impact on control of water, land reclamation and ultimately agricultural development in the San Joaquin Valley: Livermore and Chester, Haggin and Carr, and Miller and Lux, perhaps the most famous of the enterprises. Livermore and Chester were responsible, among other things, for developing the large Hollister plow (3 ft. wide by 2 ft. deep), pulled by a 40-mule team, which was used for ditch digging. Haggin and Carr were largely responsible for reclaiming the beds of the Buena Vista and Kern lakes, and for creating the Calloway Canal, which drained through the Rosedale area in Bakersfield to Goose Lake (Morgan 1914). Miller and Lux ultimately became one of the biggest private property holders in the country, controlling the rights to over 22,000 square miles. Miller and Lux's impact extended beyond Kern County, however. They recognized early-on that control of water would have important economic implications, and they played a major role in the water development of the state. They controlled, for example, over 100 miles of the San Joaquin River with the San Joaquin and Kings River Canal and Irrigation System. They were also embroiled for many years in litigation against Haggin and Carr over control of the water rights to the Kern River.

The San Joaquin Valley was dominated by agricultural pursuits until the oil boom of the early 1900s, which saw a shift some parts of the region, as some reclaimed lands previously used for farming were leased to oil companies. Nonetheless, the shift of the San Joaquin Valley towards oil production did not halt the continued growth of agriculture (Pacific Legacy 2006). The Great Depression of the 1930s brought with it the arrival of great number of migrants from the drought-

affected Dust Bowl region, looking for agricultural labor. These migrants established temporary camps in the valley, staying on long past the end of the drought and the Great Depression, eventually settling in towns such as Bakersfield where their descendants live today (Boyd 1997).

In 1877, what is now Kings County received its first SPRR stop in what would become the town of Hanford. This was named after James Madison Hanford, a rail executive, at what was originally a sheep camp. The rail-stop, with the SPRR tracks running east-west, quickly developed into a small community. A post office opened there in 1887. Lemoore is named after Dr. Lovern Lee Moore who came to the area in 1871, near the north shore of Tulare Lake. Moore developed the first subdivision in 1872, subdividing 10-ac near Lemoore High School. A post office was built in 1875 with the town originally called "Latache." Eventually it was renamed Lemoore, combining Dr. Moore's first and last names. The town was incorporated in 1900. In 1941, the U.S. Army Air Corps acquired land for an Army Air Force training field. This was eventually converted into Naval Air Station (NAS) Lemoore which is the largest major jet base in the U.S. Navy (https://en.wikipedia.org/wiki/Lemoore,_California). Lemoore today has a population of approximately 28,000 people, many of whom work in direct or indirect support for NAS Lemoore. Farming and the Tachi Palace on the Santa Rosa Rancheria are the other major employers in the region.

# 3. ARCHIVAL RECORDS SEARCH AND TRIBAL COORDINATION

## 3.1 ARCHIVAL RECORDS SEARCH

The project began with an archival records search conducted by the staff of the Southern San Joaquin Valley Information Center (IC), California State University Bakersfield, on April 5, 2021. The records search was completed to determine: (i) if prehistoric or historical archaeological sites had previously been recorded within the study areas; (ii) if the project area had been systematically surveyed by archaeologists prior to the initiation of this field study; and/or (iii) whether the general area within which the project lies was known to contain archaeological sites and to thereby be archaeologically sensitive. Records examined included archaeological site files and maps, the NRHP, Historic Property Data File, California Inventory of Historic Resources, and the California Points of Historic Interest.

According to the IC records search (Confidential Appendix A), a very small portion of the southwest corner of the study area was adjacent to a portion of an earlier linear survey. However, the Project parcel itself had not been previously surveyed and no resources had been documented within it. No other studies had been conducted within 0.5 mi. of the study area (Table 1). One previously recorded resource, a segment of the Lemoore Canal, has been documented within the search radius (Table 2).

**Table 1. Survey reports within the Study Area.**

| Report No | Year | Author (s)/Affiliation | Title |
|---|---|---|---|
| KE-00191 | 2009 | Girado, Amy and Orfila, Rebecca S./ Center for Archaeological Research., California State University, Bakersfield | A Cultural Resources Assessment of Approximately 70 Acres of Land for the City of Lemoore Arsenic Mitigation Program, Kings County, California |

**Table 2. Resources within 0.5-mi of the Study Area.**

| Primary # | Type | Description |
|---|---|---|
| P-16-000129 | Irrigation canal | Segment of the Lemoore Canal |

## 3.2 TRIBAL COORDINATION

The City of Lemoore conducted their required tribal outreach related to the proposed Project in 2020.

# 4. METHODS AND RESULTS

## 4.1 FIELD METHODS

An intensive Phase I cultural resources survey for the Lacey Ranch Project study area was conducted by ASM Associate Archaeologist Robert Azpitarte, B.A., with the assistance of ASM Assistant Archaeologists Stacey Escamilla, M.A., and Maggie Lemus, B.A. An initial attempt was made to conduct the survey on April 12, 2021, but the entirety of the project parcel was planted in mature alfalfa, severely limiting ground surface visibility (Figure 2). The crew returned to the parcel on April 26, 2021, after the field had been harvested, allowing for the survey to be undertaken with good to excellent surface visibility.

The field methods employed included intensive pedestrian examination of the ground surface for evidence of archaeological sites in the form of artifacts, surface features (e.g., bedrock mortars, historical mining equipment), and archaeological indicators (e.g., organically enriched midden soil, burnt animal bone); the identification and location of any discovered sites, should they have been present; tabulation and recording of surface diagnostic artifacts; site sketch mapping; preliminary evaluation of site integrity; and site recording, following the California Office of Historic Preservation Instructions for Recording Historic Resources, using DPR 523 forms.

## 4.2 SURVEY RESULTS

The approximately 156-ac Project parcel is an active alfalfa field bordered by paved roads on the north (Lacey Blvd.) and west (18th Ave.), residential development along the south boundary, and active almond orchards on the east. The parcel is bisected by a north-south dirt road with contemporary water treatment infrastructure (i.e., standing pipes, generators, pumps) adjacent to it. A water treatment facility abuts the southwest corner of the parcel. Just prior to the current study, an alfalfa harvest had recently occurred, providing good to excellent surface visibility for the Phase I survey (Figure 3).

No cultural resources were identified within the Project area as a result of the intensive pedestrian survey.

**Figure 2. Overview of Project area before harvest looking northwest.**

**Figure 3. Overview of Project area after harvest at time of survey looking southwest.**

# 5. SUMMARY AND RECOMMENDATIONS

An intensive Phase I cultural resources survey was conducted for the Lacey Ranch Project, Kings County, California. A records search conducted at the Southern San Joaquin Valley Archaeological Information Center, California State University, Bakersfield indicated that the study area had not been previously surveyed and that no cultural resources had been previously documented within it.

The intensive Phase I pedestrian survey was conducted on April 26, 2021, with parallel transects spaced at 15-m intervals walked across the entire Project study area. No cultural resources were identified during the survey.

## 5.1 RECOMMENDATIONS

The results of both the records search and intensive pedestrian survey conducted for the current study are negative and Project area exhibits low archaeological sensitivity. Development of the Lacey Ranch will not result in adverse impacts to significant or unique cultural resources. It is recommended, however, that an archaeologist be contacted in the unlikely event that cultural resources are uncovered during the development or use of the property, to evaluate the discovery.

# REFERENCES


Boyd, W.H.
1997 *Lower Kern River Country 1850-1950: Wilderness to Empire*. Lemoore: Kings River Press.

Cook, S. F.
1978 Historical Demography. In *California*, edited by R. F. Heizer, pp. 91-98. Handbook of North American Indians, Volume 8. Washington, D.C.: Smithsonian Institute.

Culleton, Brendan J.
2006 Implications of a freshwater radiocarbon reservoir correction for the timing of the late Holocene settlement of the Elk Hills, Kern County, California. *Journal of Science* 33:1331-1339.

Driver, H.E.
1937 Cultural Element Distributions: VI, Southern Sierra Nevada. *University of California Anthropological Records* 1(2):53-154. Berkeley

Elsasser, A.
1962 *Indians of Sequoia and Kings Canyon National Parks*. Three Rivers: Sequoia Natural History Association.

Fenenga, F.
1952 The Archaeology of the Slick Rock Village, Tulare County, California. *American Antiquity* 17:339-347.

Fenenga, G.
1993 Test Excavations at the Witt Site (CA-KIN-32). In *Finding the Evidence: The Quest for Tulare Lake's Archaeological Past*, edited by W.J. Wallace and F.A. Riddell, pp. 25-38. Contributions to Tulare Lake Archaeology II. Redondo Beach: Tulare Lake Archaeological Research Group.

Fredrickson, D.A., and J. Grossman
1977 A San Dieguito Component at Buena Vista Lake, California. *Journal of California and Great Basin Anthropology* 4:173-190.

Gayton, A.H.
1930 Yokuts-Mono Chiefs and Shamans. *University of California Publications in American Archaeology and Ethnology* 24:361-420. Berkeley.
1948 Yokuts and Western Mono Ethnography. *University of California Anthropological Records* 10:1-290. Berkeley.

Gifford, E.W., and W.E. Schenck
1926 Archaeology of the Southern San Joaquin Valley. *University of California Publications in American Archaeology and Ethnology* 23(1):1-122.

Glennan, W.S.
1987a Concave-Based Lanceolate Fluted Projectile Points from California. Prehistory of the Antelope Valley, California: An Overview, edited by R.W. Robinson. *Antelope Valley Archaeological Society, Occasional Papers No. 1*: 21-24.
1987b Evidence for Paleoeastern Culture Type in the Southwestern Great Basin. Prehistory of the Antelope Valley, California: An Overview, edited by R.W. Robinson. *Antelope Valley Archaeological Society, Occasional Papers No. 1*:11-20.

Harrington, John Peabody
n.d. Yokuts ethnographic notes. National Anthropological Archives.

Hewes, G.
1941 Archaeological reconnaissance of the central San Joaquin Valley. *American Antiquity* 7:123-133.

Horne, S.P.
1981 The Inland Chumash: Ethnography, Ethnohistory and Archaeology. Ph.D. dissertation, UCSB. Ann Arbor: University Microfilms.

Jones, T.L., G.M. Brown, L.M. Raab, J.L. McVickar, W.G. Spaulding. D.J. Kennett, A. York, and P.L. Walker
1999 Demographic Crisis in Western North America during the Medieval Climatic Anomaly. *Current Anthropology* 40:137-170.

JRP Historical Consulting
2009 *North Kern Water Storage District, Lateral Canal 8-1: Inventory and Evaluations, Kern County, California*. Prepared for North Kern Water Storage District.

King, C., C. Smith, and T. King
n.d. *Archaeological Report Related to the Interpretation of Archaeological Resources Present at the Vasquez Rocks County Park*. Report on file, SCCIC.

Kroeber, A.L.
1925 Handbook of the Indians of California. *Bureau of American Ethnology, Bulletin 78*. Washington, D.C.

Latta, F.F.
1977 *Handbook of the Yokuts Indians*. Santa Cruz: Bear State Books.

Meyer, J., D. Craig Young, and Jeffrey S. Rosenthal
2010 *Volume I: A Geoarchaeological Overview and Assessment of Caltrans Districts 6 and 9.* Submitted to California Department of Transportation.

Moratto, M.
1984 *California Archaeology*. New York: Academic Press.

Morgan, W.A.
1914 *History of Kern County, California with Biographical Sketches*. Los Angeles: Historic Record Company.

Pacific Legacy, Inc.
2006 *Southern San Joaquin Valley Oil Fields Comprehensive Study*. Manuscript on file, BLM Bakersfield office.

Powers, Stephen
1971 The Yokuts Dance for the Dead. In *The California Indians: A Source Book* (second edition), edited by R.F. Heizer and M.A. Whipple, pp. 513-519. Berkeley: University of California Press (original 1877).
1976 *Tribes of California*. Berkeley: University of California Press (original 1877).

Preston, William L.
1981 *Vanishing Landscapes: Land and Life in the Tulare Lake Basin*. Berkeley: University of California Press.

Rosenthal, J.S., G.G. White, and M.Q. Sutton
2007 The Central Valley: A view from the catbird's seat. In *California Prehistory: Colonization, Culture, and Complexity*, edited by T.L. Jones and K.A. Klar, pp. 147-163. AltaMira Press.

Schiffman, R.A. and A.P. Garfinkel
1981 Prehistory of Kern County: An Overview. *Bakersfield College Publications in Archaeology, Number 1.*

Schoenherr, A.A.
1992 *A Natural History of California*. Berkeley: University of California Press.

Siefkin, Nelson
1999 Archaeology of the Redfeldt Mound (CA-KIN-66), Tulare Basin, California. M.A. thesis, Department of Sociology and Anthropology, California State University, Bakersfield.

Sutton, M.Q.
1988a An Introduction to the Archaeology of the Western Mojave Desert, California. *Archives of California Prehistory, No. 14*. Salinas, Coyote Press.

1988b On the Late Prehistory of the Western Mojave Desert. *Pacific Coast Archaeological Society Quarterly* 24(1):22-29.

2009 People and Language: Defining the Takic Expansion into the Southern California. *Pacific Coast Archaeological Society Quarterly* 40(2, 3):31-73.

W&S Consultants

1994 *Phase II Test Excavations and Determinations of Significance at CA-LAN-2133, -2233, -2234, -2235, -2236, -2240, -2241 and -2242, Los Angeles County, California*. Manuscript on file, SCCIC.

1999 *Class III Inventory/Limited Archaeological Testing Program for the Ducor Telephone Project, Kennedy Meadows, Tulare County, California*. Manuscript on file, SCCIC.

2004 *Class II Inventory of the Carrizo Plain National Monument, San Luis Obispo County, California*. Report on file, BLM Bakersfield office.

2006 *Phase II Test Excavations and Determinations of Significance for the Tejon Mountain Village Project, Kern County, California*. Report on file, Tejon Ranch Company.

Wedel, W.

1941 Archaeological Investigations at Buena Vista Lake, Kern County, California. *Bureau of American Ethnology Bulletin* 130.

Whitley, D.S.

1992 Shamanism and Rock Art in Far Western North America. *Cambridge Archaeological Journal* 2(1):89-113.

2000 *The Art of the Shaman: Rock Art of California*. Salt Lake City: University of Utah Press.

Whitley, D.S., and M.P. Beaudry

1991 Chiefs on the Coast: The Development of Complex Society in the Tiquisate Region in Ethnographic Perspective. *The Development of Complex Civilizations in Southeastern Mesoamerica*, W. Fowler, ed., pp. 101-120. Orlando: CRC Press.

Whitley, D.S., G. Gumerman IV, J. Simon, and E. Rose

1988 The Late Prehistoric Period in the Coso Range and Environs. *Pacific Coast Archaeological Society Quarterly* 24(1):2-10.

Whitley, D.S., J. Simon, and J.H.N. Loubser

2007 The Carrizo Collapse: Art and Politics in the Past. In *A Festschrift Honoring the Contributions of California Archaeologist Jay von Werlhof*, edited by R.L. Kaldenberg, pp. 199-208. Ridgecrest: Maturango Museum Publication 20.

Zimmerman, K.L., C.L. Pruett, and M.Q. Sutton

1989 A Clovis-Like Projectile Point from the Southern Sierra Nevada. *Journal of California and Great Basin Anthropology* 11:89-91.

# CONFIDENTIAL APPENDIX A: RECORDS SEARCH

California Historical Resources Information System

Fresno
Kern
Kings
Madera
Tulare

**Southern San Joaquin Valley Information Center**
California State University, Bakersfield
Mail Stop: 72 DOB
9001 Stockdale Highway
Bakersfield, California 93311-1022
(661) 654-2289
E-mail: ssjvic@csub.edu
Website: www.csub.edu/ssjvic

4/5/2021

David Whitley
ASM Affiliates, Inc.
20424 West Valley Blvd., Suite A
Tehachapi, CA 93561

Re: Lacey Ranch Project – Crawford & Bowen Planning, Inc.
Records Search File No.: 21-125

The Southern San Joaquin Valley Information Center received your record search request for the project area referenced above, located on the Lemoore USGS 7.5' quads. The following reflects the results of the records search for the project area and the 0.5 mile radius:

As indicated on the data request form, the locations of resources and reports are provided in the following format: ☐ custom GIS maps ☒ GIS data

| | |
|---|---|
| Resources within project area: | None |
| Resources within 0.5 mile radius: | P-16-000129 |
| Reports within project area: | KI-00191 |
| Reports within 0.5 mile radius: | None |

| | | | |
|---|---|---|---|
| **Resource Database Printout (list):** | ☒ enclosed | ☐ not requested | ☐ nothing listed |
| **Resource Database Printout (details):** | ☒ enclosed | ☐ not requested | ☐ nothing listed |
| **Resource Digital Database Records:** | ☐ enclosed | ☒ not requested | ☐ nothing listed |
| **Report Database Printout (list):** | ☒ enclosed | ☐ not requested | ☐ nothing listed |
| **Report Database Printout (details):** | ☒ enclosed | ☐ not requested | ☐ nothing listed |
| **Report Digital Database Records:** | ☐ enclosed | ☒ not requested | ☐ nothing listed |
| **Resource Record Copies:** | ☒ enclosed | ☐ not requested | ☐ nothing listed |
| **Report Copies:** | ☐ enclosed | ☒ not requested | ☐ nothing listed |
| **OHP Built Environment Resources Directory:** | ☐ enclosed | ☐ not requested | ☒ nothing listed |
| **Archaeological Determinations of Eligibility:** | ☐ enclosed | ☐ not requested | ☒ nothing listed |
| **CA Inventory of Historic Resources (1976):** | ☐ enclosed | ☐ not requested | ☒ nothing listed |

**Caltrans Bridge Survey:** Not available at SSJVIC; please see https://dot.ca.gov/programs/environmental-analysis/cultural-studies/california-historical-bridges-tunnels

**Ethnographic Information:** Not available at SSJVIC

**Historical Literature:** Not available at SSJVIC

**Historical Maps:** Not available at SSJVIC; please see http://historicalmaps.arcgis.com/usgs/

**Local Inventories:** Not available at SSJVIC

**GLO and/or Rancho Plat Maps:** Not available at SSJVIC; please see http://www.glorecords.blm.gov/search/default.aspx#searchTabIndex=0&searchByTypeIndex=1 and/or http://www.oac.cdlib.org/view?docId=hb8489p15p;developer=local;style=oac4;doc.view=items

**Shipwreck Inventory:** Not available at SSJVIC; please see https://www.slc.ca.gov/shipwrecks/

**Soil Survey Maps:** Not available at SSJVIC; please see http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Invoices for Information Center services will be sent under separate cover from the California State University, Bakersfield Accounting Office.

Thank you for using the California Historical Resources Information System (CHRIS).

Sincerely,

Digitally signed by Celeste M. Thomson
Date: 2021.04.05 09:06:59 -07'00'

Celeste M. Thomson
Coordinator

# Report List

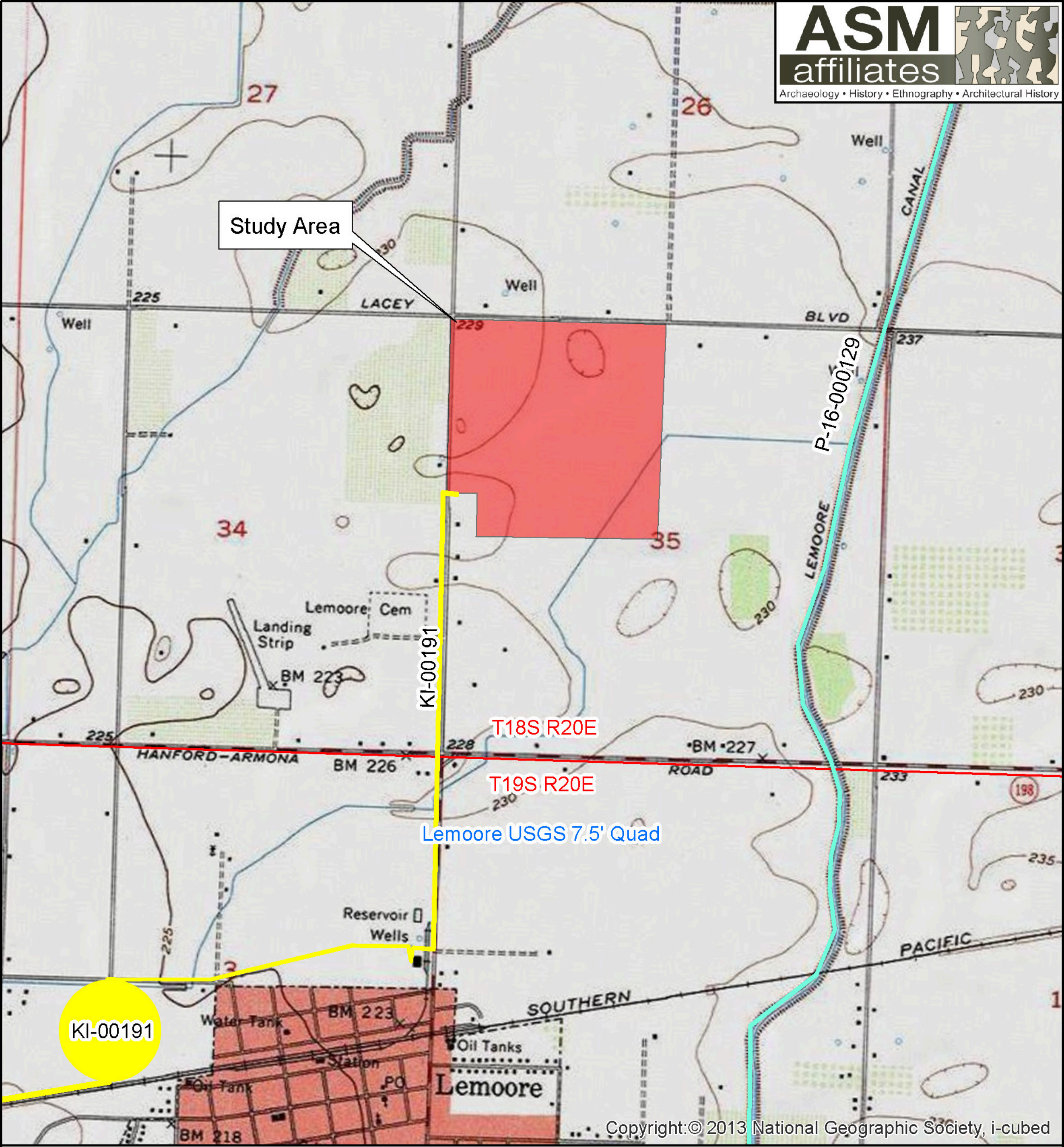
**SSJVIC Record Search 21-125**

| Report No. | Other IDs | Year | Author(s) | Title | Affiliation | Resources |
|---|---|---|---|---|---|---|
| KI-00191 | Submitter - CAR Project No. 09-30 | 2009 | Girado, Amy and Orfila, Rebecca S. | A Cultural Resources Assessment of Approximately 70 Acres of Land for the City of Lemoore Arsenic Mitigation Program, Kings County, California | Center for Archaeological Research., California State University, Bakersfield | |

# Resource List

**SSJVIC Record Search 21-125**

| Primary No. | Trinomial | Other IDs | Type | Age | Attribute codes | Recorded by | Reports |
|---|---|---|---|---|---|---|---|
| P-16-000129 | CA-KIN-000192H | Resource Name - Lemoore Canal | Structure | Historic | AH06; HP20 | 2001 (Bai "Tom" Tang, Daniel Ballester, CRM Tech);<br>2017 (Ryan Tubbs, Kristina Lindgren, ECORP Consulting, Inc.);<br>2017 (Jessica Jones, Applied EarthWorks, Inc.) | KI-00310, KI-00319 |




**Legend**

- StudyArea
- P-16-000129
- KI-00191
- USGS 7.5' Quad
- Township and Range

**Lacey Ranch Project**
**Crawford & Bowen Planning, Inc.**

0 0.25 0.5 1 Miles

0 0.375 0.75 1.5 Kilometers

N

**1:24,000**

# APPENDIX D

## Semas Property

18th Avenue & West Lacey Boulevard
Lemoore, California 93245

Report Date: March 5, 2019
Partner Project No. 19-239283.1

Prepared for:

**Maricopa Orchards, LLC**
1396 West Herndon Avenue, Suite 110
Fresno, California 93711

March 5, 2019

Ms. Christine Lingenfelter
Maricopa Orchards, LLC
1396 West Herndon Avenue, Suite 110
Fresno, California 93711

Subject: Phase I Environmental Site Assessment
Semas Property
18th Avenue & West Lacey Boulevard
Lemoore, California 93245
Partner Project No. 19-239283.1

Dear Ms. Lingenfelter:

Partner Engineering and Science, Inc. (Partner) is pleased to provide the results of the *Phase I Environmental Site Assessment* (Phase I ESA) report of the abovementioned address (the "subject property"). This assessment was performed in conformance with the scope and limitations as detailed in the ASTM Practice E1527-13 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.

This assessment included a site reconnaissance as well as research and interviews with representatives of the public, property ownership, site manager, and regulatory agencies. An assessment was made, conclusions stated, and recommendations outlined.

We appreciate the opportunity to provide environmental services to you. If you have any questions concerning this report, or if we can assist you in any other matter, please contact me at (559) 917-9700 or ctaylor@partneresi.com.

Sincerely,

Cody Taylor
National Client Manager

# EXECUTIVE SUMMARY

Partner Engineering and Science, Inc. (Partner) has performed a Phase I Environmental Site Assessment (ESA) in accordance with the scope of work and limitations of ASTM Standard Practice E1527-13, the Environmental Protection Agency Standards and Practices for All Appropriate Inquiries (AAI) (40 CFR Part 312) and set forth by Maricopa Orchards, LLC, for the property located at 18th Avenue & West Lacey Boulevard in Lemoore, Kings County, California (the "subject property"). The Phase I Environmental Site Assessment is designed to provide Maricopa Orchards, LLC, with an assessment concerning environmental conditions (limited to those issues identified in the report) as they exist at the subject property.

### Property Description

The subject property is located on the eastern side of 18th Avenue and the southern side of West Lacey Boulevard within a residential and agricultural area of Kings County. Please refer to the table below for further description of the subject property:

| ***Subject Property Data*** | |
|---|---|
| **Site Location:** | 18th Avenue & West Lacey Boulevard, Lemoore, California |
| **Addresses:** | None Identified |
| **Property Use:** | Agricultural |
| **Land Acreage (Ac):** | 155.85 Ac |
| **Number of Buildings:** | None |
| **Assessor's Parcel Number (APN):** | 021-030-057 |
| **Current Owner:** | Stephen L. Semas Family GST EXE TRS |
| **Site Assessment Performed By:** | Sheryl A. Amezcua of Partner |
| **Site Assessment Conducted On:** | February 27, 2019 |

The subject property is currently agricultural land. On-site operations consist of the cultivation of alfalfa. In addition to the on-site agricultural land, the subject property is also improved with a diesel-powered irrigation well with an associated 10,000-gallon diesel aboveground storage tank (AST), two electrically powered irrigation wells, a lift pump, an irrigation canal, and unpaved roads the surround and bisect the parcel.

According to available historical sources, the subject property was formerly undeveloped land as early as 1927; developed with residential and agricultural uses in 1950 to 1954; and has been developed as agricultural land from at least 1950 to the present.

The immediately surrounding properties consist of rural residences and agricultural land to the north across West Lacey Boulevard; single-family residences to the south; an orchard to the east; and a City of Lemoore municipal well and 18th Avenue to the west, beyond which is an orchard and a rural residence.

According to information obtained from State Water Resources Control Board (SWRCB) GeoTracker database for a nearby site, groundwater in the vicinity of the subject property is inferred to be approximately 20 feet below ground surface (bgs) and flow toward the west.

### Findings

A *recognized environmental condition (REC)* refers to the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: due to release to the environment; under conditions indicative of a release to the environment; or under conditions that pose a material threat of a future release to the environment. The following was identified during the course of this assessment:

- According to information obtained from the California Division of Oil, Gas and Geothermal Resources (DOGGR) Well Finder Database, a plugged and abandoned oil/gas well is located on the subject property. According to records available from the DOGGR Well Finder Database, the well, identified as Kreyenhagen 23-35, was drilled to a depth of 9,090 feet bgs on April 1, 1964 and was subsequently abandoned in accordance with DOGGR requirements on May 16, 1964. Review of the DOGGR records indicates that no oil or gas was encountered during the development of the well.

  The presence of the well on the subject property represent a potential for environmental concerns if 1) drill cuttings (muds) were stored on the subject property and 2) emission of methane and hydrogen sulfide gases are likely to impact the subject property. During oil well drilling of this type, it was common practice to deposit the drill cuttings in a large excavation near the location of the well, commonly referred to as drilling mud pits. The drill cuttings could potentially contain elevated levels of crude oil, petroleum hydrocarbons, and metals. An additional issue of concern with oil/gas wells is the potential emission of methane and hydrogen sulfide gases. These gases can migrate through geologic materials and/or through pathways such as old oil wells, fissures, and fractures in underlying geologic formations. The emitted gases have the potential to accumulate within building interiors or basements and adversely affect human health. However, due to the fact that the well did not produce oil or gas, potential emissions of methane and hydrogen sulfide gases are not expected to represent a significant environmental concern at this time. However, the likely presence of drilling mud pits in connection with the wells is considered a REC, as they represent conditions indicative of a release to the environment. It should be noted that the owner/operator of the well would likely be responsible for any future well abandonment activities, including any subsurface investigations and/or remediation related to potential contamination associated with drilling mud pits on the subject property. Partner also notes that DOGGR may require the re-abandonment of the wells to current abandonment guidelines should future development on the subject property "prevent or impede access to the well for purposes of remedying a currently perceived future problem" (California Petroleum and Gas Laws, 3208.1).

A *controlled recognized environmental condition (CREC)* refers to a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls. The following was identified during the course of this assessment:

- Partner did not identify evidence of CRECs during the course of this assessment.

A *historical recognized environmental condition (HREC)* refers to a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls. The following was identified during the course of this assessment:

- Partner did not identify evidence of HRECs during the course of this assessment.

An *environmental issue* refers to environmental concerns identified by Partner, which do not qualify as RECs; however, warrant further discussion. The following was identified during the course of this assessment:

- During Partner's February 27, 2019 site reconnaissance, a diesel-powered irrigation well connected to an approximately 10,000-gallon diesel AST was observed within the central portion of the subject property. The AST was observed to be placed over the unpaved ground surface absent secondary containment. A minor release of apparent diesel fuel was observed on the unpaved ground surface beneath a valve on the northern-end of the AST. This area of staining was limited in extent and is considered a *de minimis* condition. Heavy oily surface staining from apparent lubrication oil was observed beneath and around the associated diesel engine on the southern side of the AST, and around the irrigation well pump. The vertical extent of the staining in these areas could not be determined. However, lubrication oil does not typically migrate easily in the subsurface and is not expected to have migrated to significant depth. Based on this information, the staining observed around the AST, engine, and well pump is considered a *de minimis* condition.
- The subject property has been utilized for agricultural purposes since at least 1950. There is a potential that agricultural related chemicals such as pesticides, herbicides, and fertilizers, may have been used and stored on-site. Agricultural chemicals in use today are commonly selected using a licensed pest control advisor and are reported to the Agricultural Commissioner. It is unknown if environmentally persistent pesticides and/or herbicides were historically applied to the crops grown on the subject property. However, it has been Partner's experience with similar agricultural properties that there is a low potential for soil contamination at concentrations in excess of regulatory thresholds as a result of the past use of persistent pesticides/herbicides from normal crop application. Furthermore, no specific areas of concern for agricultural chemical use have been identified during the course of this assessment. Based on these factors, the previous agricultural use of the subject property is not expected to represent a significant environmental concern at this time.

### Conclusions, Opinions, and Recommendations

Partner has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-13 of the property located at 18th Avenue and West Lacey Boulevard in Lemoore, Kings County, California (the "subject property"). Any exceptions to, or deletions from, this practice are described in Section 1.5 of this report.

This assessment has revealed evidence of RECs and environmental issues in connection with the subject property. Based on the conclusions of this assessment, Partner recommends the following:

- In the event of any proposed development in the area of the abandoned oil/gas well, DOGGR should be contacted to determine current development and/or well abandonment requirements. Additionally, if a higher level of due diligence is desired, a Phase II investigation could be conducted to evaluate the presence or absence of drilling mud pits and the condition of the subsurface associated with suspected former drilling mud pits prior to any redevelopment in the area of the on-site well.
- As a best management practice, the areas of surface staining located near the diesel AST and engine should be excavated, drummed, and removed from the subject property for proper off-site disposal. Additionally, secondary containment should be provided for the diesel AST in order to prevent an accidental release from adversely impacting the subject property.
- In the event of any future residential development, if a higher level of comfort is desired, soil sampling and analysis for agricultural chemicals could be conducted to assess the condition of near surface soils at the subject property from current and historical agricultural use.

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**Figure 1** Site Location Map
**Figure 2** Site Plan
**Figure 3** Topographic Map

**Appendices**

**Appendix A** Site Photographs
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# 1.0 INTRODUCTION

Partner Engineering and Science, Inc. (Partner) has performed a Phase I Environmental Site Assessment (ESA) in conformance with the scope and limitations of ASTM Standard Practice E1527-13 and the Environmental Protection Agency Standards and Practices for All Appropriate Inquiries (AAI) (40 CFR Part 312) for the property located at 18th Avenue and West Lacey Boulevard in Lemoore, Kings County, California (the "subject property"). Any exceptions to, or deletions from, this scope of work are described in the report.

## 1.1 Purpose

The purpose of this ESA is to identify existing or potential Recognized Environmental Conditions (as defined by ASTM Standard E1527-13) affecting the subject property that: 1) constitute or result in a material violation or a potential material violation of any applicable environmental law; 2) impose any material constraints on the operation of the subject property or require a material change in the use thereof; 3) require clean-up, remedial action or other response with respect to Hazardous Substances or Petroleum Products on or affecting the subject property under any applicable environmental law; 4) may affect the value of the subject property; and 5) may require specific actions to be performed with regard to such conditions and circumstances. The information contained in the ESA Report will be used by Client to: 1) evaluate its legal and financial liabilities for transactions related to foreclosure, purchase, sale, loan origination, loan workout or seller financing; 2) evaluate the subject property's overall development potential, the associated market value and the impact of applicable laws that restrict financial and other types of assistance for the future development of the subject property; and/or 3) determine whether specific actions are required to be performed prior to the foreclosure, purchase, sale, loan origination, loan workout or seller financing of the subject property.

This ESA was performed to permit the *User* to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchaser limitations on scope of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 U.S.C. §9601) liability (hereinafter, the "*landowner liability protections*," or "*LLPs*"). ASTM Standard E1527-13 constitutes "*all appropriate inquiry* into the previous ownership and uses of the *property* consistent with good commercial or customary practice" as defined at 42 U.S.C. §9601(35)(B).

## 1.2 Scope of Work

The scope of work for this ESA is in accordance with the requirements of ASTM Standard E1527-13. This assessment included: 1) a property and adjacent site reconnaissance; 2) interviews with key personnel; 3) a review of historical sources; 4) a review of regulatory agency records; and 5) a review of a regulatory database report provided by a third-party vendor. Partner contacted local agencies, such as environmental health departments, fire departments and building departments in order to determine any current and/or former hazardous substances usage, storage and/or releases of hazardous substances on the subject property.

Additionally, Partner researched information on the presence of activity and use limitations (AULs) at these agencies. As defined by ASTM E1527-13, AULs are the legal or physical restrictions or limitations on the use of, or access to, a site or facility: 1) to reduce or eliminate potential exposure to hazardous substances or petroleum products in the soil or groundwater on the subject property; or 2) to prevent activities that could interfere with the effectiveness of a response action, in order to ensure maintenance of a condition of no significant risk to public health or the environment. These legal or physical restrictions, which may include institutional and/or engineering controls (IC/ECs), are intended to prevent adverse impacts to individuals or populations that may be exposed to hazardous substances and petroleum products in the soil or groundwater on the property.

If requested by Client, this report may also include the identification, discussion of, and/or limited sampling of asbestos-containing materials (ACMs), lead-based paint (LBP), mold, and/or radon.

## 1.3 Limitations

Partner warrants that the findings and conclusions contained herein were accomplished in accordance with the methodologies set forth in the Scope of Work. These methodologies are described as representing good commercial and customary practice for conducting an ESA of a property for the purpose of identifying recognized environmental conditions. There is a possibility that even with the proper application of these methodologies there may exist on the subject property conditions that could not be identified within the scope of the assessment or which were not reasonably identifiable from the available information. Partner believes that the information obtained from the record review and the interviews concerning the subject property is reliable. However, Partner cannot and does not warrant or guarantee that the information provided by these other sources is accurate or complete. The conclusions and findings set forth in this report are strictly limited in time and scope to the date of the evaluations. The conclusions presented in the report are based solely on the services described therein, and not on scientific tasks or procedures beyond the scope of agreed-upon services or the time and budgeting restraints imposed by the Client. No other warranties are implied or expressed.

Some of the information provided in this report is based upon personal interviews, and research of available documents, records, and maps held by the appropriate government and private agencies. This report is subject to the limitations of historical documentation, availability, and accuracy of pertinent records, and the personal recollections of those persons contacted.

This practice does not address requirements of any state or local laws or of any federal laws other than the all appropriate inquiry provisions of the LLPs. Further, this report does not intend to address all of the safety concerns, if any, associated with the subject property.

Environmental concerns, which are beyond the scope of a Phase I ESA as defined by ASTM include the following: ACMs, LBP, radon, and lead in drinking water. These issues may affect environmental risk at the subject property and may warrant discussion and/or assessment; however, are considered non-scope issues. If specifically requested by the Client, these non-scope issues are discussed in Section 6.3.

## 1.4 User Reliance

Maricopa Orchards, LLC, engaged Partner to perform this assessment in accordance with an agreement governing the nature, scope and purpose of the work as well as other matters critical to the engagement. All reports, both verbal and written, are for the sole use and benefit of Maricopa Orchards, LLC. Either verbally or in writing, third parties may come into possession of this report or all or part of the information generated as a result of this work. In the absence of a written agreement with Partner granting such rights, no third parties shall have rights of recourse or recovery whatsoever under any course of action against Partner, its officers, employees, vendors, successors or assigns. Any such unauthorized user shall be responsible to protect, indemnify and hold Partner, Client and their respective officers, employees, vendors, successors and assigns harmless from any and all claims, damages, losses, liabilities, expenses (including reasonable attorneys' fees) and costs attributable to such Use. Unauthorized use of this report shall constitute acceptance of and commitment to these responsibilities, which shall be irrevocable and shall apply regardless of the cause of action or legal theory pled or asserted. Additional legal penalties may apply.

This report has been completed under specific Terms and Conditions relating to scope, relying parties, limitations of liability, indemnification, dispute resolution, and other factors relevant to any reliance on this report.

## 1.5 Limiting Conditions

The findings and conclusions contain all of the limitations inherent in these methodologies that are referred to in ASTM E1527-13. Specific limitations and exceptions to this ESA are more specifically set forth below:

- Partner was unable to determine the property use at five-year intervals, which constitutes a data gap. Except for property tax files and recorded land title records, which were not considered to be sufficiently useful, Partner reviewed all standard historical sources and conducted appropriate interviews.
- Partner submitted Freedom of Information Act (FOIA) requests to the Kings County Environmental Health Services (KCEHS) and San Joaquin Valley Air Pollution Control District (SJVAPCD) for information pertaining to hazardous substances, underground storage tanks, releases, inspection records, etc. for the subject property. As of this writing, these agencies have not responded to Partner's requests. Based on information obtained from other sources, this limitation is not expected to alter the overall findings of this assessment.
- Interviews with past owners, operators, and occupants were not reasonably ascertainable and thus constitute a data gap. Based on information obtained from other historical sources (as discussed in Section 3.0), this data gap is not expected to alter the findings of this assessment.
- Partner requested information relative to deed restrictions and environmental liens, a title search, and completion of a pre-survey questionnaire from the Report User. This information was not provided at the time of the assessment.

# 2.0 SITE DESCRIPTION

## 2.1 Site Location and Legal Description

The subject property is located on the eastern side of 18th Avenue and the southern side of West Lacey Boulevard in Lemoore, California. According to information obtained from the Kings County Assessor and Chicago Title Company, the subject property is legally described as *PTN of NW ¼ 35/18/20* and ownership is currently vested in Stephen L. Semas Family GST EXE TRS since 2012.

Please refer to Figure 1: Site Location Map, Figure 2: Site Plan, Figure 3: Topographic Map, and Appendix A: Site Photographs for the location and site characteristics of the subject property.

## 2.2 Current Property Use

The subject property is currently agricultural land. On-site operations consist of the cultivation of alfalfa. In addition to the on-site agricultural land, the subject property is also improved with a diesel-powered irrigation well with an associated 10,000-gallon diesel AST, two electrically powered irrigation wells, a lift pump, an irrigation canal, and unpaved roads the surround and bisect the parcel.

The subject property is designated for agricultural development by Kings County.

The subject property was not identified in the regulatory database report, discussed in Section 4.2.

## 2.3 Current Use of Adjacent Properties

The subject property is located within a residential and agricultural area of Kings County. During the vicinity reconnaissance, Partner observed the following land use on properties in the immediate vicinity of the subject property:

| *Immediately Surrounding Properties* | |
|---|---|
| **North:** | West Lacey Boulevard, beyond which are rural residences and agricultural land (17628, 17790, 17910, and 18320 West Lacey Boulevard) |
| **South:** | Single-family residences |
| **East:** | Orchard |
| **West:** | City of Lemoore Well #11 and solar farm, and 18th Avenue, beyond which is an orchard and a rural residence (10026 18th Avenue) |

The adjacent property to the north was identified as a Certified Unified Program Agency (CUPA) Listings site; and the adjacent property to the west was identified as a California Environmental Reporting System (CERS) and a CERS Hazardous Waste Generator (CERS HAZ WASTE) site in the regulatory database report, as further discussed in Section 4.2.

## 2.4 Physical Setting Sources

### 2.4.1 Topography

The United States Geological Survey (USGS) *Lemoore, California* Quadrangle 7.5-minute series topographic map was reviewed for this ESA. According to the contour lines on the topographic map, the subject property is located at approximately 235 feet above mean sea level (MSL). The contour lines in the area of the subject property indicate the area is sloping gently toward the southwest. The subject property is depicted on the 1954 map as developed with two residential-type buildings within the northern portion, an irrigation canal bisecting the southeastern portion, and the remainder depicted as undeveloped.

A copy of the topographic map is included as Figure 3 of this report.

### 2.4.2 Hydrology

The nearest surface water in the vicinity of the subject property is an irrigation canal located within the southeastern portion of the subject property. No settling ponds, lagoons, surface impoundments, or natural catch basins were observed at the subject property during this assessment.

The subject property is not currently connected to the public water system, and no domestic wells are located on the subject property. Three irrigation wells are present on the subject property.

According to information obtained from SWRCB GeoTracker database for a nearby site, groundwater in the vicinity of the subject property is inferred to be approximately 20 feet bgs and flow toward the west.

### 2.4.3 Geology/Soils

The subject property is situated within the central portion of the San Joaquin Valley. The San Joaquin Valley comprises the southern portion of the Great Valley Geomorphic Province of the State of California. The Great Valley is a long structural trough situated between the Sierra Nevada and Cascade Range to the east, the Coast Range to the west, and the Tehachapi Mountains to the south. The San Joaquin Valley has been filled with several thousand feet of sedimentary deposits derived from the erosion of the Sierra Nevada and Coastal Ranges and deposited by major to minor drainages and their tributaries. Near-surface sediments are dominated by sands and silty sands with lesser silts, minor clays, and gravel. The sedimentary deposits in the region form large coalescing alluvial fans with gentle slopes deposited primarily during Plio-Pleistocene time by the streams that drain the adjacent uplands. Sediments consist of recent and older alluvium derived primarily from the Sierra Nevada and the Coast Ranges. Older (Pleistocene) alluvium unconformably overlies Pliocene-Pleistocene continental and marine deposits. The valley basement, consisting of pre-Tertiary granitic and metamorphic rocks, underlies the clastic section at a depth in excess of 2,000 feet bgs.

Based on information obtained from the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey online database, the subject property is mapped

as Nord complex and Whitewolf coarse sandy loam.  The Nord series consists of well-drained soils of alluvium derived from igneous rock on alluvial fan landforms.  The Whitewolf series consists of somewhat excessively drained soils with a typical profile of coarse sandy loam to 10 inches followed by sand to 60 inches bgs.   Slopes range from 0 to 2 percent.

### *2.4.4 Flood Zone Information*

Partner performed a review of the Flood Insurance Rate Map, published by the Federal Emergency Management Agency.  According to Community Panel Number 06031C0160D dated September 16, 2015, the subject property appears to be located in unshaded Zone X, an area of minimal flood hazard.

A copy of the reviewed flood map is included in Appendix B of this report.

# 3.0 HISTORICAL INFORMATION

Partner obtained historical use information about the subject property from a variety of sources. A chronological listing of the historical data found is summarized in the table below:

| ***Historical Use Information*** | | |
|---|---|---|
| **Period/Date** | **Source** | **Description/Use** |
| 1927, 1942 | Topographic Maps | Undeveloped |
| 1950-1954 | Aerial Photographs, Topographic Maps, | Residential and Agricultural Land |
| 1963-Present | Topographic Maps, Aerial Photographs, On-site Observations | Agricultural Land |

Potential environmental concerns were identified in association with the current and former uses of the subject property, as further discussed in Sections 4.1 and 6.2.

Additionally, the subject property has been utilized for agricultural purposes since at least 1950. There is a potential that agricultural related chemicals such as pesticides, herbicides, and fertilizers, may have been used and stored on-site. Agricultural chemicals in use today are commonly selected using a licensed pest control advisor and are reported to the Agricultural Commissioner. It is unknown if environmentally persistent pesticides and/or herbicides were historically applied to the crops grown on the subject property. However, it has been Partner's experience with similar agricultural properties that there is a low potential for soil contamination at concentrations in excess of regulatory thresholds as a result of the past use of persistent pesticides/herbicides from normal crop application. Furthermore, no specific areas of concern for agricultural chemical use have been identified during the course of this assessment. Based on these factors, the previous agricultural use of the subject property is not expected to represent a significant environmental concern at this time.

## 3.1 Aerial Photograph Review

Partner obtained available aerial photographs of the subject property and surrounding area from Environmental Data Resources, Inc. (EDR) on February 20, 2019. The following features were noted to be visible on the subject property and adjacent properties during the aerial photograph review:

| ***Date: 1950, 1954*** | ***Scale: 1"=500'*** |
|---|---|
| **Subject Property:** | Appears to be developed with a residence and barn within the southwestern portion, with scattered agricultural development and an irrigation canal bisecting the southeastern portion |
| **North:** | Appears to be developed with a residence and barn with agricultural cultivation across a road (West Lacey Boulevard) |
| **South:** | Appears to be agriculturally cultivated with portions undeveloped native land |
| **East:** | Appears to be native land with a residence within the northern portion |
| **West:** | Appears to be developed with a residence, a road (18$^{th}$ Avenue) beyond which is agriculturally cultivated |

| Date: 1974 | Scale: 1″=500′ |
|---|---|
| **Subject Property:** | Appears to be agriculturally developed with row crops with the previously noted buildings absent |
| **North:** | No significant changes visible except for the development of two residences |
| **South:** | Appears to be developed with the current residential subdivision |
| **East:** | No significant changes visible with the previously noted residence absent |
| **West:** | No significant changes visible |

| Date: 1976, 1984, 1994 | Scale: 1″=500′ |
|---|---|
| **Subject Property:** | No significant changes visible |
| **North:** | No significant changes visible |
| **South:** | No significant changes visible |
| **East:** | No significant changes visible |
| **West:** | No significant changes visible with the previously noted residence absent |

| Date: 2006, 2009, 2012, 2016 | Scale: 1″=500′ |
|---|---|
| **Subject Property:** | No significant changes visible |
| **North:** | No significant changes visible |
| **South:** | No significant changes visible |
| **East:** | No significant changes visible |
| **West:** | Appears to be developed with the current large capacity AST with associated equipment, and a road, beyond which is a residence within the northern portion |

Copies of reviewed aerial photographs are included in Appendix B of this report.

### 3.2 Fire Insurance Maps

Partner contracted with EDR to provide Sanborn fire insurance maps for the subject property and surrounding area on February 20, 2019. EDR's Sanborn map search revealed no coverage for the subject property or adjacent properties.

A copy of the EDR, *Certified Sanborn Map Report* is included in Appendix B of this report.

### 3.3 City Directories

City directories were not researched due to the absence of addresses associated with the subject property.

### 3.4 Historical Topographic Maps

Partner reviewed historical topographic maps obtained from NETR Online on March 1, 2019. The following features were noted to be depicted on the subject property and adjacent properties during the topographic map review:

| Date: 1927, 1942 | |
|---|---|
| **Subject Property:** | Depicted as undeveloped land with a well located within the western portion and an irrigation canal bisecting within the southeastern portion |
| **North:** | Depicted as developed with residential-type buildings across a road |
| **South:** | Depicted as undeveloped land |
| **East:** | Depicted as developed with a residential-type building |
| **West:** | Depicted as developed with a residential-type building across a road |

***Date: 1963, 1980, 1986***

| | |
|---|---|
| **Subject Property:** | No significant changes depicted |
| **North:** | No significant changes depicted |
| **South:** | No significant changes depicted |
| **East:** | No significant changes depicted |
| **West:** | Depicted as developed with agricultural land and a water well |

Due to copyright consideration copies of the reviewed topographic maps are not included in this report.

# 4.0 REGULATORY RECORDS REVIEW

## 4.1 Regulatory Agencies

### 4.1.1 State Department

| ***Regulatory Agency Data*** | |
|---|---|
| **Name of Agency:** | California Environmental Protection Agency (CalEPA) |
| **Point of Contact:** | CalEPA Regulated Sites Portal |
| **Agency Address:** | https://siteportal.calepa.ca.gov/nsite/ |
| **Date of Contact:** | February 25, 2019 |
| **Method of Communication:** | Online Research |
| **Summary of Communication:** | No records regarding hazardous substance use, storage, or releases; or the presence of USTs and AULs on the subject property were on file with the CalEPA. |

### 4.1.2 Health Department

| ***Regulatory Agency Data*** | |
|---|---|
| **Name of Agency:** | Kings County Environmental Health Services (KCEHS) |
| **Point of Contact:** | Administrative Personnel |
| **Agency Address:** | 330 Campus Drive Hanford, California |
| **Agency Phone Number:** | (559) 584-1401 |
| **Date of Contact:** | February 21, 2019 |
| **Method of Communication:** | Faxed Request |
| **Summary of Communication:** | As of the date of this report, Partner has not received a response from the KCEHS for inclusion in this report. |

### 4.1.3 Fire Department

| ***Regulatory Agency Data*** | |
|---|---|
| **Name of Agency:** | Kings County Fire Department (KCFD) |
| **Point of Contact:** | Mr. Rick Leavy |
| **Agency Address:** | 280 North Campus Drive Hanford, California |
| **Agency Phone Number:** | (559) 852-2881 |
| **Date of Contact:** | February 21, 2019 |
| **Method of Communication:** | Telephone |
| **Summary of Communication:** | The KCEHS is the Certified Unified Program Agency (CUPA) designated by CalEPA as the environmental regulatory control authority for Kings County (see Section 4.1.2 above). |

### 4.1.4 Air Pollution Control Agency

| Regulatory Agency Data | |
|---|---|
| **Name of Agency:** | San Joaquin Valley Air Pollution Control District (SJVAPCD) |
| **Point of Contact:** | Administrative Personnel |
| **Agency Address:** | 1990 East Gettysburg Avenue, Fresno, California |
| **Agency Phone Number:** | (559) 230-6000 |
| **Date of Contact:** | February 25, 2019 |
| **Method of Communication:** | Online FOIA Request |
| **Summary of Communication:** | As of the date of this report, Partner has not received a response from the SJVAPCD for inclusion in this report. |

### 4.1.5 Regional Water Quality Agency

| Regulatory Agency Data | |
|---|---|
| **Name of Agency:** | State Water Resources Control Board (SWRCB) |
| **Point of Contact:** | SWRCB GeoTracker Database |
| **Agency Address:** | http://geotracker.waterboards.ca.gov/ |
| **Date of Contact:** | February 25, 2019 |
| **Method of Communication:** | Online Research |
| **Summary of Communication:** | No records regarding hazardous substance use, storage, or releases; or the presence of USTs and AULs on the subject property were on file with the SWRCB. |

### 4.1.6 Department of Toxic Substances Control

| Regulatory Agency Data | |
|---|---|
| **Name of Agency:** | California Department of Toxic Substances Control (DTSC) |
| **Point of Contact:** | DTSC EnviroStor and Hazardous Waste Tracking System Databases |
| **Agency Address:** | http://www.envirostor.dtsc.ca.gov/public/ |
| **Date of Contact:** | February 25, 2019 |
| **Method of Communication:** | Online Research |
| **Summary of Communication:** | No records regarding hazardous substance use, storage, or releases; or the presence of USTs and AULs on the subject property were on file with the DTSC. |

### 4.1.7 Building Department

| Regulatory Agency Data | |
|---|---|
| **Name of Agency:** | Kings County Community Development Agency, Building Division (KCBD) |
| **Point of Contact:** | Mr. Alex Hernandez |
| **Agency Address:** | 1400 West Lacey Boulevard Hanford, California |
| **Agency Phone Number:** | (559) 852-2670 |
| **Date of Contact:** | February 28, 2019 |
| **Method of Communication:** | Telephone |
| **Summary of Communication:** | According to the KCBD, permit records are filed by address. As such, no building permit records were identified by the KCBD for the subject property. |

### 4.1.8 Planning Department

| Regulatory Agency Data | |
|---|---|
| **Name of Agency:** | Kings County Community Development Agency, Planning Division (KCPD) |
| **Point of Contact:** | Kings County GIS Viewer |
| **Agency Address:** | http://kingscountygis.com/parcel_query/ |
| **Date of Contact:** | February 21, 2019 |
| **Method of Communication:** | Online Research |
| **Summary of Communication:** | According to records reviewed, the subject property is zoned *Limited Agricultural* for agricultural development by Kings County. |

### 4.1.9 Oil & Gas Exploration

| Regulatory Agency Data | |
|---|---|
| **Name of Agency:** | California Division of Oil, Gas and Geothermal Resources (DOGGR) |
| **Point of Contact:** | DOGGR Well Finder Database |
| **Agency Address:** | https://maps.conservation.ca.gov/doggr/wellfinder/#close |
| **Date of Contact:** | February 27, 2019 |
| **Method of Communication:** | Online Research |
| **Summary of Communication:** | According to records reviewed, an abandoned oil/gas well is located on the subject property. This well is discussed below: |

According to records available from the DOGGR Well Finder Database, Well Kreyenhagen 23-35 was drilled to a depth of 9,090 feet bgs on April 1, 1964 and was subsequently abandoned in accordance with DOGGR requirements on May 16, 1964. Review of the DOGGR records indicates that no oil or gas was encountered during the development of the on-site oil/gas well.

The presence of the well on the subject property represent a potential for environmental concerns if 1) drill cuttings (muds) were stored on the subject property and 2) emission of methane and hydrogen sulfide gases are likely to impact the subject property. During oil well drilling of this type, it was common practice to deposit the drill cuttings in a large excavation near the location of the well, commonly referred to as drilling mud pits. The drill cuttings could potentially contain elevated levels of crude oil, petroleum hydrocarbons, and metals. An additional issue of concern with oil/gas wells is the potential emission of methane and hydrogen sulfide gases. These gases can migrate through geologic materials and/or through pathways such as old oil wells, fissures, and fractures in underlying geologic formations. The emitted gases have the potential to accumulate within building interiors or basements and adversely affect human health. However, due to the absence of structural developments in the area of the abandoned wells, and the fact that the wells did not produce oil or gas, potential emissions of methane and hydrogen sulfide gases are not expected to represent a significant environmental concern at this time. However, the likely presence of drilling mud pits in connection with the wells is considered a REC, as they represent conditions indicative of a release to the environment. It should be noted that the owners/operators of the wells would likely be responsible for any future well abandonment activities, including any subsurface investigations and/or remediation related to potential contamination associated with drilling mud pits on the subject property. Partner also notes that DOGGR may require the re-abandonment of the wells to current abandonment guidelines should future development on the subject

property "prevent or impede access to the well for purposes of remedying a currently perceived future problem" (California Petroleum and Gas Laws, 3208.1).

### 4.1.10 Assessor's Office

| ***Regulatory Agency Data*** | |
|---|---|
| **Name of Agency:** | Kings County Assessor's Office (KCAO) |
| **Point of Contact:** | KCAO Parcel Information Database |
| **Agency Address:** | https://assr.parcelquest.com/Home/Disclaimer |
| **Date of Contact:** | February 28, 2019 |
| **Method of Communication:** | Online Research |
| **Summary of Communication:** | According to records reviewed, the subject property is identified by Assessor Parcel Number (APN) 021-030-057, and is legally described as *PTN of NW ¼ 35/18/20*. The subject property parcel is 155.85-acres. |

Copies of pertinent documents obtained from the aforementioned regulatory agencies, if available, are included in Appendix B of this report.

## 4.2 Mapped Database Records Search

Information from standard federal, state, county, and city environmental record sources was provided by EDR. Data from governmental agency lists are updated and integrated into one database, which is updated as these data are released. The information contained in this report was compiled from publicly available sources and the locations of the sites are plotted utilizing a geographic information system, which geocodes the site addresses. The accuracy of the geocoded locations is approximately +/-300 feet.

Using the ASTM definition of migration, Partner considers the migration of hazardous substances or petroleum products in any form onto the subject property during the evaluation of each site listed on the radius report, which includes solid, liquid, and vapor.

### *4.2.1 Regulatory Database Summary*

| ***Radius Report Data*** | | | | |
|---|---|---|---|---|
| **Database** | **Search Radius (mile)** | **Subject Property** | **Adjacent Properties** | **Sites of Concern** |
| Federal NPL or Delisted NPL Site | 1.00 | No | No | No |
| Federal SEMS Site | 0.50 | No | No | No |
| Federal SEMS-Archive Site | 0.50 | No | No | No |
| Federal RCRA CORRACTS Facility | 1.00 | No | No | No |
| Federal RCRA TSDF Facility | 0.50 | No | No | No |
| Federal RCRA Generators Site | 0.25 | No | No | N/A |
| Federal IC/EC Registries | 0.50 | No | No | No |
| Federal ERNS Site | Subject Property | No | N/A | N/A |
| State/Tribal Equivalent NPL | 1.00 | No | No | No |
| State/Tribal Equivalent CERCLIS | 1.00 | No | No | No |
| State/Tribal Landfill/Solid Waste Disposal Site | 0.50 | No | No | No |
| State/Tribal Leaking Storage Tank Site | 0.50 | No | No | No |
| State/Tribal Registered Storage Tank Sites | 0.25 | No | No | N/A |
| State/Tribal Voluntary Cleanup Sites (VCP) | 0.50 | No | No | No |
| State/Tribal Spills | 0.50 | No | No | No |
| Federal Brownfield Sites | 0.50 | No | No | No |
| State Brownfield Sites | 0.50 | No | No | No |
| Miscellaneous Databases | Varies | No | **Yes** | No |
| EDR MGP | 1.00 | No | No | No |
| EDR Hist Auto | 0.125 | No | No | N/A |
| EDR Hist Cleaner | 0.125 | No | No | N/A |

### *4.2.2 Subject Property Listings*

The subject property is not identified in the regulatory database report.

### 4.2.3 Adjacent Property Listings

The adjacent property to the north is identified as a CUPA Listings site in the regulatory database report, as discussed below:

- Pederson Farms at Avenue 18 and Lacey Boulevard is regulated by the KCEHS under the CUPA program. The database indicates that the facility is inactive. No additional pertinent information is listed in the database. This facility is not listed on databases indicative of a release of hazardous substances. Based on the absence of documented releases and the KCEHS oversight, this listing is not expected to represent a significant environmental concern.

The adjacent property to the west is identified as a CERS and a CERS HAZ WASTE site in the regulatory database report, as discussed below:

- City of Lemoore Well #11 at Avenue 18 and Glendale Avenue is regulated by the KCEHS as a CERS database as a Hazardous Chemical Management and Chemical Storage Facility. No violations are reported in the CERS databases. This facility is not listed on databases indicative of a release of hazardous substances. Based on the absence of documented releases and the KCEHS oversight, this listing is not expected to represent a significant environmental concern.

Based on the findings, vapor migration from the adjacent properties is not expected to represent a significant environmental concern at this time.

### 4.2.4 Sites of Concern Listings

No sites of concern are identified in the regulatory database report. Based on various mitigating factors including relative distance from the subject property, inferred direction of groundwater flow, media affected, and/or regulatory status, the remaining listed sites within the specified search radius of the subject property which appeared on local, State, or Federally published lists of sites that have had releases of hazardous substances, are not expected to represent a significant environmental concern.

Based on the findings, vapor migration from the surrounding properties is not expected to represent a significant environmental concern at this time.

### 4.2.5 Orphan Listings

No orphan listings are identified in the regulatory database report.

A copy of the regulatory database report is included in Appendix C of this report.

## 5.0 USER PROVIDED INFORMATION AND INTERVIEWS

In order to qualify for one of the *Landowner Liability Protections (LLPs)* offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the *Brownfields Amendments*), the *User* must conduct the following inquiries required by 40 CFR 312.25, 312.28, 312.29, 312.30, and 312.31. The *User* should provide the following information to the *environmental professional*. Failure to provide this information could result in a determination that *all appropriate inquiries* is not complete. The *User* is asked to provide information or knowledge of the following:

- Review Title and Judicial Records for Environmental Liens and AULs
- Specialized Knowledge or Experience of the User
- Actual Knowledge of the User
- Reason for Significantly Lower Purchase Price
- Commonly Known or *Reasonably Ascertainable* information
- Degree of Obviousness
- Reason for Preparation of this Phase I ESA

Fulfillment of these user responsibilities is key to qualification for the identified defenses to CERCLA liability. Partner requested our Client to provide information to satisfy User Responsibilities as identified in Section 6 of the ASTM guidance.

Pursuant to ASTM E1527-13, Partner requested the following site information from Maricopa Orchards, LLC (User of this report).

| ***User Responsibilities*** | | | | |
|---|---|---|---|---|
| **Item** | **Provided By User** | **Not Provided By User** | **Discussed Below** | **Does Not Apply** |
| Environmental Pre-Survey Questionnaire | | | **X** | |
| Title Records, Environmental Liens, and AULs | | | **X** | |
| Specialized Knowledge | | | **X** | |
| Actual Knowledge | | | **X** | |
| Valuation Reduction for Environmental Issues | | | **X** | |
| Identification of Key Site Manager | **Section 5.1.3** | | | |
| Reason for Performing Phase I ESA | **Section 1.1** | | | |
| Prior Environmental Reports | | **X** | | |
| Other | | **X** | | |

## 5.1 Interviews

### *5.1.1 Interview with Owner*

Mr. Stephen L. Semas subject property owner, was not aware of any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the subject property; any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the subject property; or any notices from a governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products.

Mr. Semas indicated the presence of a diesel AST on the subject property. Mr. Semas further stated that there are no USTs, clarifiers, oil/water separators, or groundwater monitoring wells on the subject property to the best of his knowledge.

### *5.1.2 Interview with Report User*

Please refer to Section 5.2 below for information requested from the Report User. The information requested was not received prior to the issuance of this report.

### *5.1.3 Interview with Key Site Manager*

Mr. Semas was also identified as the key site manager.

### *5.1.4 Interviews with Past Owners, Operators, and Occupants*

Interviews with past owners, operators, and occupants were not reasonably ascertainable and thus constitute a data gap.

### *5.1.5 Interview with Others*

As the subject property is not an abandoned property as defined in ASTM 1527-13, interview with others were not performed.

## 5.2 User Provided Information

### *5.2.1 Title Records, Environmental Liens, and AULs*

Partner was not provided with title records or environmental lien and AUL information for review as part of this assessment.

### *5.2.2 Specialized Knowledge*

No specialized knowledge of environmental conditions associated with the subject property was provided by the User at the time of the assessment.

### *5.2.3 Actual Knowledge of the User*

No actual knowledge of any environmental lien or AULs encumbering the subject property or in connection with the subject property was provided by the User at the time of the assessment.

### 5.2.4 Valuation Reduction for Environmental Issues

No knowledge of valuation reductions associated with the subject property was provided by the User at the time of the assessment.

### 5.2.5 Commonly Known or Reasonably Ascertainable Information

The User did not provide information that is commonly known or *reasonably ascertainable* within the local community about the subject property at the time of the assessment.

### 5.2.6 Previous Reports and Other Provided Documentation

No previous reports or other pertinent documentation was provided to Partner for review during the course of this assessment.

# 6.0 SITE RECONNAISSANCE

The weather at the time of the site visit was partly sunny. Refer to Section 1.5 for limitations encountered during the site reconnaissance and Sections 2.1 and 2.2 for subject property operations. The table below provides the site assessment details:

| ***Site Assessment Data*** | |
|---|---|
| **Site Assessment Performed By:** | Sheryl A. Amezcua |
| **Site Assessment Conducted On:** | February 27, 2019 |

Partner was unaccompanied during the site reconnaissance activities. Environmental concerns were identified during the site reconnaissance related to signs of a release, as further discussed in Section 6.2.

## 6.1 General Site Characteristics

### *6.1.1 Solid Waste Disposal*

No solid waste is not currently generated at the subject property. No evidence of illegal dumping of solid waste was observed during the site reconnaissance.

### *6.1.2 Sewage Discharge and Disposal*

No wastewater treatment facilities or septic systems were observed or reported on the subject property.

### *6.1.3 Surface Water Drainage*

Stormwater is removed from the subject property primarily by direct infiltration to unpaved ground surfaces.

According to information obtained from United States Fish & Wildlife Service *Wetlands Mapper*, a riverine wetland is depicted in the southeastern portion of the subject property. A comprehensive wetlands survey would be required in order to formally determine actual wetlands on the subject property. With the exception of the on-site irrigation canal, no surface impoundments, wetlands, natural catch basins, settling ponds, or lagoons are located on the subject property. No drywells were identified on the subject property.

### *6.1.4 Source of Heating and Cooling*

No heating or cooling equipment was observed on the subject property.

### *6.1.5 Wells and Cisterns*

Three irrigation wells were observed on the subject property. One of the wells is diesel-powered and two are electrically powered. An electric lift pump is also located on the subject property. No information regarding analytical testing or construction specifications of the on-site wells was found during the course of this assessment. Water sampling was not conducted to verify water quality.

### *6.1.6 Wastewater*

No domestic wastewater is currently generated at the subject property. No industrial process is currently performed at the subject property.

### 6.1.7 Septic Systems

No septic systems were observed or reported on the subject property.

### 6.1.8 Additional Site Observations

No additional general site characteristics were observed during the site reconnaissance.

## 6.2 Potential Environmental Hazards

### 6.2.1 Hazardous Substances and Petroleum Products Used or Stored at the Site

The diesel-powered irrigation well was observed to be connected to an approximately 10,000-gallon diesel AST within the central portion of the subject property. The AST was observed to be placed over the unpaved ground surface absent secondary containment. Staining was observed on the unpaved ground surface in the area of the AST and well, as further discussed in Section 6.2.3.

No other hazardous substances or petroleum products were observed on the subject property during the site reconnaissance.

### 6.2.2 Aboveground & Underground Hazardous Substance or Petroleum Product Storage Tanks (ASTs/USTs)

A diesel AST was observed on the subject property, as previously discussed in Section 6.2.1.

No evidence of current or former USTs was observed during the site reconnaissance.

### 6.2.3 Evidence of Releases

A minor release of apparent diesel fuel was observed on the unpaved ground surface beneath a valve on the northern-end of the diesel AST. This area of staining was limited in extent and is considered a *de minimis* condition. Heavy oily surface staining from apparent lubrication oil was observed beneath and around the associated diesel engine on the southern side of the AST, and around the irrigation well pump. The vertical extent of the staining in these areas could not be determined. However, lubrication oil does not typically migrate easily in the subsurface and is not expected to have migrated to significant depth. Based on this information, the staining observed around the AST, engine, and well pump is considered a *de minimis* condition.

No additional spills, stains or other indications that a surficial release has occurred at the subject property were observed.

### 6.2.4 Polychlorinated Biphenyls (PCBs)

Older transformers and other electrical equipment could contain PCBs at a level that subjects them to regulation by the U.S. EPA. PCBs in electrical equipment are controlled by United States Environmental Protection Agency regulations 40 CFR, Part 761. Under the regulations, there are three categories into which electrical equipment can be classified: 1) Less than 50 parts per million (ppm) of PCBs – "*Non-PCB;*" 2) 50 ppm-500 ppm – "*PCB-Contaminated;*" and, 3) Greater than 500 ppm – "*PCB-Containing.*" The manufacture, process, or distribution in commerce or use of any PCB in any manner other than in a totally enclosed manner was prohibited after January 1, 1977.

The site reconnaissance addressed indoor and outdoor transformers that may contain PCBs. Pole-mounted and pad-mounted transformers were observed on the subject property. The transformers are not labeled indicating PCB content. No staining or leakage was observed in the vicinity of the transformers. PG&E maintains ownership and operational responsibility for the transformers. Based on the good condition of the equipment, the transformers are not expected to represent a significant environmental concern.

No other potential PCB-containing equipment (interior transformers, oil-filled switches, hoists, lifts, dock levelers, hydraulic elevators, balers, etc.) was observed on the subject property during the site reconnaissance.

#### *6.2.5 Strong, Pungent, or Noxious Odors*

Petroleum odors were noted in the area of the diesel AST and associated engine.

No other strong, pungent, or noxious odors were evident during the site reconnaissance.

#### *6.2.6 Pools of Liquid*

No pools of liquid were observed on the subject property during the site reconnaissance.

#### *6.2.7 Drains, Sumps, and Clarifiers*

No drains, sumps, or clarifiers, were observed on the subject property during the site reconnaissance.

#### *6.2.8 Pits, Ponds, and Lagoons*

No pits, ponds, or lagoons were observed on the subject property.

#### *6.2.9 Stressed Vegetation*

No stressed vegetation was observed on the subject property.

#### *6.2.10 Additional Potential Environmental Hazards*

No additional environmental hazards, including landfill activities or radiological hazards, were observed.

### 6.3 Non-ASTM Services

#### *6.3.1 Asbestos-Containing Materials (ACMs)*

Asbestos is the name given to a number of naturally occurring, fibrous silicate minerals mined for their useful properties such as thermal insulation, chemical and thermal stability, and high tensile strength. The Occupational Safety and Health Administration (OSHA) regulation 29 CFR 1926.1101 requires certain construction materials to be *presumed* to contain asbestos, for purposes of this regulation. All thermal system insulation (TSI), surfacing material, and asphalt/vinyl flooring that are present in a building constructed prior to 1981 and have not been appropriately tested are "presumed asbestos-containing material" (PACM).

No buildings or structures are located on the subject property. As such, an asbestos evaluation was not required by the scope of services.

### 6.3.2 Lead-Based Paint (LBP)

Lead is a highly toxic metal that affects virtually every system of the body. LBP is defined as any paint, varnish, stain, or other applied coating that has 1 $mg/cm^2$ (or 5,000 ug/g or 0.5% by weight) or more of lead. Congress passed the Residential Lead-Based Paint Hazard Reduction Act of 1992, also known as "Title X", to protect families from exposure to lead from paint, dust, and soil. Under Section 1017 of Title X, intact LBP on most walls and ceilings is not considered a "hazard," although the condition of the paint should be monitored and maintained to ensure that it does not become deteriorated. Further, Section 1018 of this law directed the Housing and Urban Development (HUD) and the US EPA to require the disclosure of known information on LBP and LBP hazards before the sale or lease of most housing built before 1978.

No buildings or structures are located on the subject property. As such, a LBP evaluation was not required by the scope of services.

### 6.3.3 Radon

Radon is a colorless, odorless, naturally occurring, radioactive, inert, gaseous element formed by radioactive decay of radium (Ra) atoms. The US EPA has prepared a map to assist National, State, and local organizations to target their resources and to implement radon-resistant building codes. The map divides the country into three Radon Zones, according to the table below:

| *EPA Radon Zones* | | |
|---|---|---|
| **EPA Zones** | **Average Predicted Radon Levels** | **Potential** |
| Zone 1 | Exceed 4.0 pCi/L | Highest |
| Zone 2 | Between 2.0 and 4.0 pCi/L | Moderate |
| Zone 3 | Less than 2.0 pCi/L | Low |

It is important to note that the EPA has found homes with elevated levels of radon in all three zones, and the US EPA recommends site-specific testing in order to determine radon levels at a specific location. However, the map does give a valuable indication of the propensity of radon gas accumulation in structures.

Radon sampling was not conducted as part of this assessment. Review of the US EPA Map of Radon Zones places the subject property in Zone 3. Based upon the radon zone classification, radon is not considered to be a significant environmental concern.

### 6.3.4 Lead in Drinking Water

The subject property is not currently connected to the public water system, and no domestic wells are located on the subject property. Three irrigation wells are present on the subject property. Water sampling was not conducted to verify water quality.

### *6.3.5 Mold*

Molds are microscopic organisms found virtually everywhere, indoors and outdoors. Mold will grow and multiply under the right conditions, needing only sufficient moisture (e.g.in the form of very high humidity, condensation, or water from a leaking pipe, etc.) and organic material (e.g., ceiling tile, drywall, paper, or natural fiber carpet padding).

No buildings or structures are located on the subject property. As such, a mold evaluation was not required by the scope of services.

## 6.4 Adjacent Property Reconnaissance

The adjacent property reconnaissance consisted of observing the adjacent properties from the subject property premises. No items of environmental concern were identified on the adjacent properties during the site assessment, including hazardous substances, petroleum products, ASTs, USTs, evidence of releases, PCBs, strong or noxious odors, pools of liquids, sumps or clarifiers, pits or lagoons, stressed vegetation, or any other potential environmental hazards.

# 7.0 FINDINGS AND CONCLUSIONS

### Findings

A *REC* refers to the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: due to release to the environment; under conditions indicative of a release to the environment; or under conditions that pose a material threat of a future release to the environment. The following was identified during the course of this assessment:

- According to information obtained from the DOGGR Well Finder Database, a plugged and abandoned oil/gas well is located on the subject property. According to records available from the DOGGR Well Finder Database, the well, identified as Kreyenhagen 23-35, was drilled to a depth of 9,090 feet bgs on April 1, 1964 and was subsequently abandoned in accordance with DOGGR requirements on May 16, 1964. Review of the DOGGR records indicates that no oil or gas was encountered during the development of the well.

  The presence of the well on the subject property represent a potential for environmental concerns if 1) drill cuttings (muds) were stored on the subject property and 2) emission of methane and hydrogen sulfide gases are likely to impact the subject property. During oil well drilling of this type, it was common practice to deposit the drill cuttings in a large excavation near the location of the well, commonly referred to as drilling mud pits. The drill cuttings could potentially contain elevated levels of crude oil, petroleum hydrocarbons, and metals. An additional issue of concern with oil/gas wells is the potential emission of methane and hydrogen sulfide gases. These gases can migrate through geologic materials and/or through pathways such as old oil wells, fissures, and fractures in underlying geologic formations. The emitted gases have the potential to accumulate within building interiors or basements and adversely affect human health. However, due to the fact that the well did not produce oil or gas, potential emissions of methane and hydrogen sulfide gases are not expected to represent a significant environmental concern at this time. However, the likely presence of drilling mud pits in connection with the wells is considered a REC, as they represent conditions indicative of a release to the environment. It should be noted that the owner/operator of the well would likely be responsible for any future well abandonment activities, including any subsurface investigations and/or remediation related to potential contamination associated with drilling mud pits on the subject property. Partner also notes that DOGGR may require the re-abandonment of the wells to current abandonment guidelines should future development on the subject property "prevent or impede access to the well for purposes of remedying a currently perceived future problem" (California Petroleum and Gas Laws, 3208.1).

A *CREC* refers to a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls. The following was identified during the course of this assessment:

- Partner did not identify evidence of CRECs during the course of this assessment.

A *HREC* refers to a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls. The following was identified during the course of this assessment:

- Partner did not identify evidence of HRECs during the course of this assessment.

An *environmental issue* refers to environmental concerns identified by Partner, which do not qualify as RECs; however, warrant further discussion. The following was identified during the course of this assessment:

- During Partner's February 27, 2019 site reconnaissance, a diesel-powered irrigation well connected to an approximately 10,000-gallon diesel AST was observed within the central portion of the subject property. The AST was observed to be placed over the unpaved ground surface absent secondary containment. A minor release of apparent diesel fuel was observed on the unpaved ground surface beneath a valve on the northern-end of the AST. This area of staining was limited in extent and is considered a *de minimis* condition. Heavy oily surface staining from apparent lubrication oil was observed beneath and around the associated diesel engine on the southern side of the AST, and around the irrigation well pump. The vertical extent of the staining in these areas could not be determined. However, lubrication oil does not typically migrate easily in the subsurface and is not expected to have migrated to significant depth. Based on this information, the staining observed around the AST, engine, and well pump is considered a *de minimis* condition.
- The subject property has been utilized for agricultural purposes since at least 1950. There is a potential that agricultural related chemicals such as pesticides, herbicides, and fertilizers, may have been used and stored on-site. Agricultural chemicals in use today are commonly selected using a licensed pest control advisor and are reported to the Agricultural Commissioner. It is unknown if environmentally persistent pesticides and/or herbicides were historically applied to the crops grown on the subject property. However, it has been Partner's experience with similar agricultural properties that there is a low potential for soil contamination at concentrations in excess of regulatory thresholds as a result of the past use of persistent pesticides/herbicides from normal crop application. Furthermore, no specific areas of concern for agricultural chemical use have been identified during the course of this assessment. Based on these factors, the previous agricultural use of the subject property is not expected to represent a significant environmental concern at this time.

### Conclusions, Opinions, and Recommendations

Partner has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-13 of the property located at 18th Avenue and West Lacey Boulevard in Lemoore, Kings County, California (the "subject property"). Any exceptions to, or deletions from, this practice are described in Section 1.5 of this report.

This assessment has revealed evidence of RECs and environmental issues in connection with the subject property. Based on the conclusions of this assessment, Partner recommends the following:

- In the event of any proposed development in the area of the abandoned oil/gas well, DOGGR should be contacted to determine current development and/or well abandonment requirements. Additionally, if a higher level of due diligence is desired, a Phase II investigation could be conducted to evaluate the presence or absence of drilling mud pits and the condition of the subsurface associated with suspected former drilling mud pits prior to any redevelopment in the area of the on-site well.
- As a best management practice, the areas of surface staining located near the diesel AST and engine should be excavated, drummed, and removed from the subject property for proper off-site disposal. Additionally, secondary containment should be provided for the diesel AST in order to prevent an accidental release from adversely impacting the subject property.
- In the event of any future residential development, if a higher level of comfort is desired, soil sampling and analysis for agricultural chemicals could be conducted to assess the condition of near surface soils at the subject property from current and historical agricultural use.

# 8.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

Partner has performed a Phase I Environmental Site Assessment of the property located at 18th Avenue and West Lacey Boulevard in Lemoore, Kings County, California in conformance with the scope and limitations of the protocol and the limitations stated earlier in this report. Exceptions to or deletions from this protocol are discussed earlier in this report.

By signing below, Partner declares that, to the best of our professional knowledge and belief, we meet the definition of *Environmental Professional* as defined in §312.10 of 40 CFR §312. Partner has the specific qualifications based on education, training, and experience to assess a *property* of the nature, history, and setting of the subject *property*. Partner has developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Prepared By:

Sheryl A. Amezcua
Project Scientist

Reviewed By:

Joel Redding
Environmental Professional
Senior Project Manager

# 9.0 REFERENCES

### Reference Documents

American Society for Testing and Materials, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, ASTM Designation: E1527-13.

Environmental Data Resources, Inc. (EDR), 6 Armstrong Road, 4th floor, Shelton, Connecticut 06484

EDR, Aerial Photo Decade Package, February 2019.

EDR, Certified Sanborn Map Report, February 2019.

EDR, Radius Map Report, February 2019.

Federal Emergency Management Agency, Federal Insurance Administration, National Flood Insurance Program, Flood Insurance Map, accessed via the internet, February 2019.

United States Department of Agriculture, Natural Resources Conservation Service, Web Soil Survey, accessed via the internet, February 2019.

United States Department of Fish & Wildlife Service *Wetlands Mapper*, accessed via the internet, February 2019.

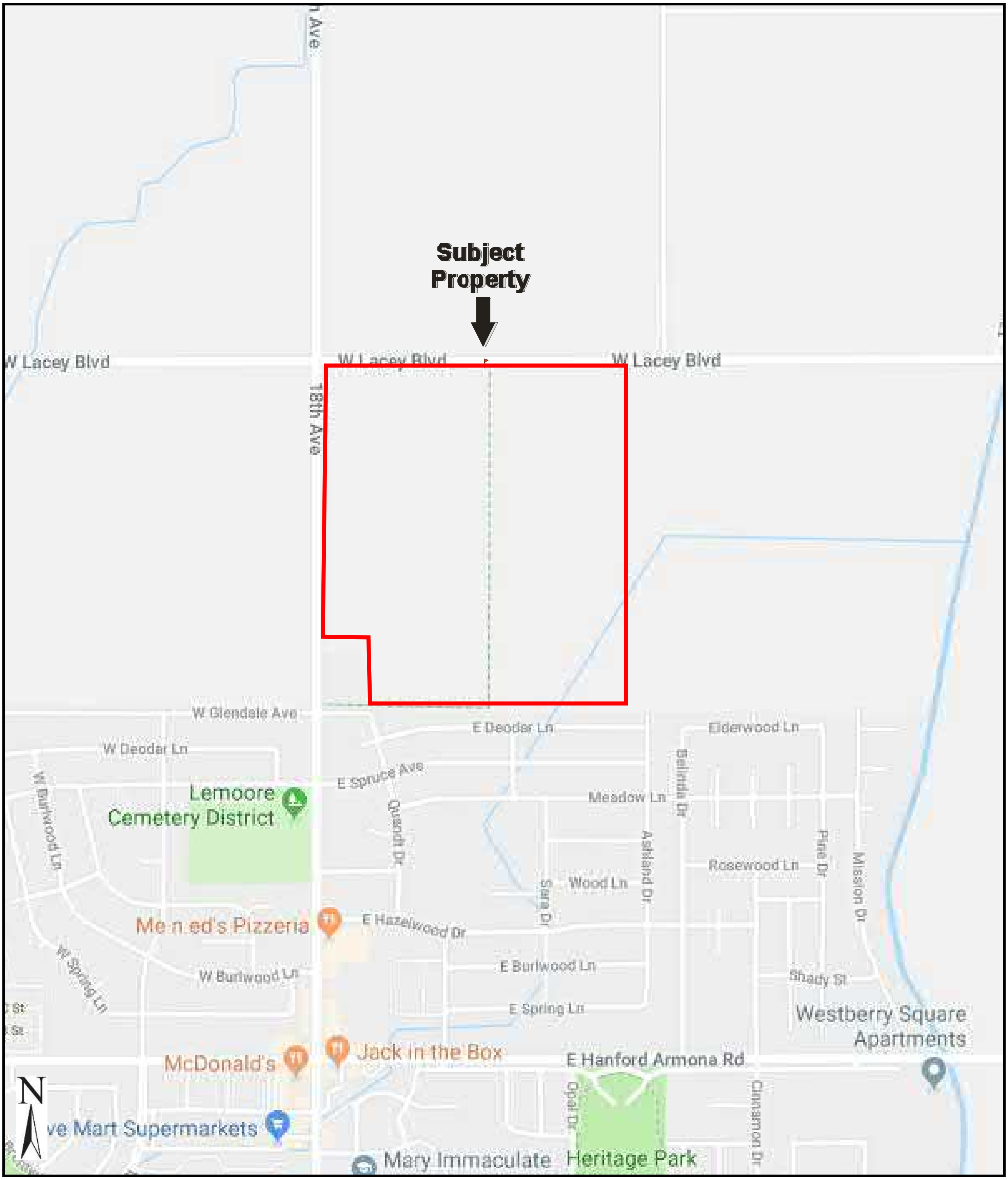
United States Environmental Protection Agency, EPA Map of Radon Zones (Document EPA-402-R-93-071), accessed via the internet, February 2019.

# FIGURES

1 SITE LOCATION MAP

2 SITE PLAN

3 TOPOGRAPHIC MAP




Drawing Not To Scale

KEY:
Subject Property

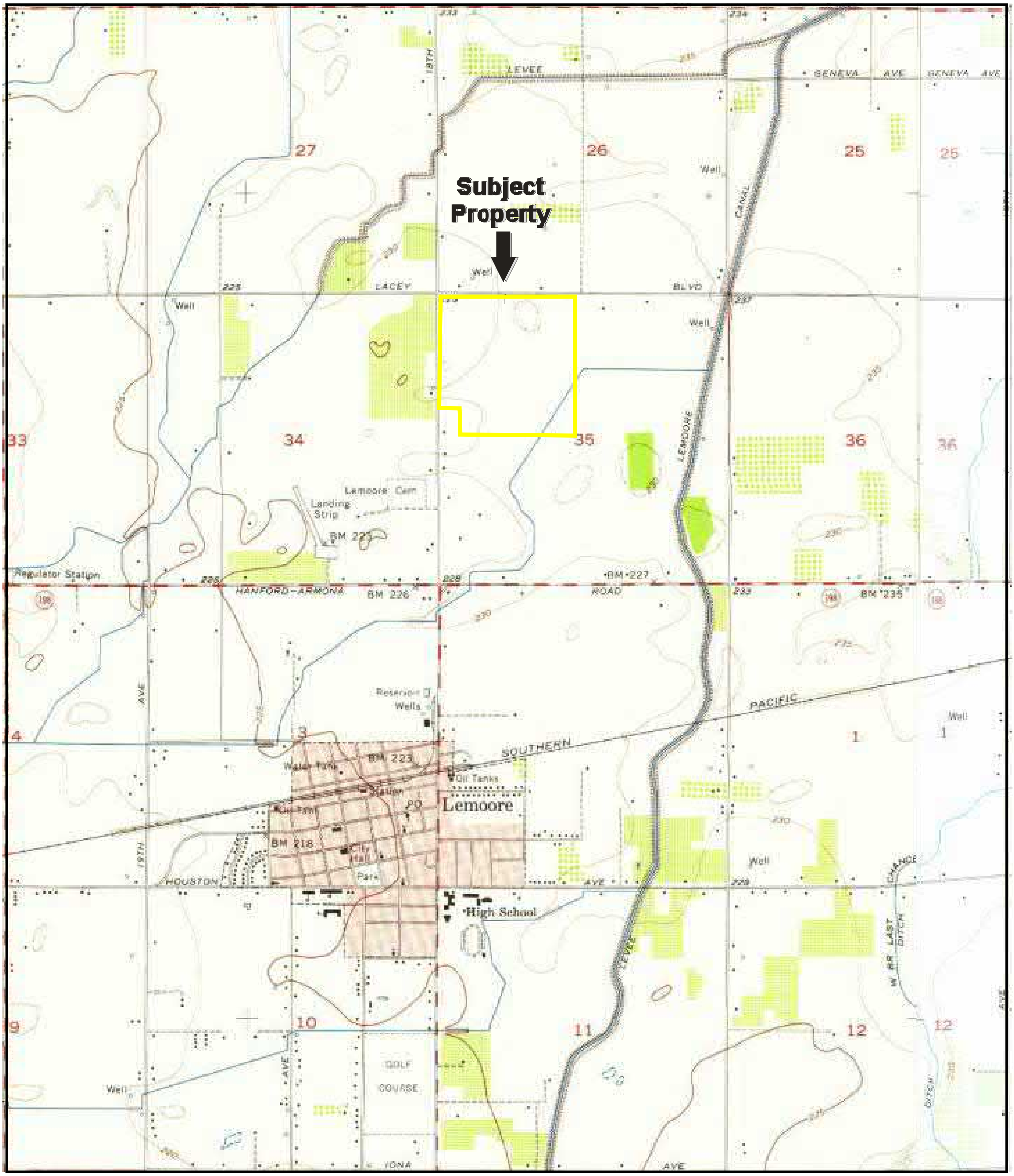
**GROUNDWATER FLOW**

**KEY:**

**Subject Property**

Electrically Powered Irrigation Well/Lift Pump

Diesel-Powered Irrigation Well




USGS 7.5 Minute *Lemoore, California* Quadrangle
Created: 1954

KEY:
Subject Property

# APPENDIX A: SITE PHOTOGRAPHS

1. View of the western portion of the subject property.

2. View of the southern portion of the subject property.

3. View of the subject property.

4. View of the northern portion of the subject property.

5. View of the central portion of the subject property.

6. View of the northern portion of the subject property.

7. View of the eastern portion of the subject property.

8. View of the central portion of the subject property.

9. View of the eastern portion of the subject property.

10. View of the central portion of the subject property.

11. View of the southern portion of the subject property.

12. View of an electrically powered irrigation well.

13. View of an electrically powered irrigation well.

14. View of a 10,000-gallon diesel AST located within the central portion of the subject property.

15. View of *de minimis* diesel surface staining beneath diesel AST valve.

16. View of the lubrication oil surface staining between the diesel AST and associated engine.

17. View of the lubrication oil surface staining beneath the engine.

18. View of the diesel-powered irrigation well and de minimis lubrication oil surface staining.

19. View of a lift pump within the southern portion of the subject property.

20. View of the concrete standpipe and the southern portion of the subject property.

21. View of the northern-adjacent property across West Lacey Boulevard.

22. View of the southern-adjacent properties.

23. View of the eastern-adjacent property.

24. View of the western-adjacent property across 18th Avenue.

# APPENDIX B: HISTORICAL/REGULATORY DOCUMENTATION

**Semas Property**

18th Avenue and West Lacey Boulevard

LEMOORE, CA 93245

Inquiry Number: 5566933.5

February 20, 2019

# The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

# EDR Aerial Photo Decade Package

02/20/19

**Site Name:**

Semas Property
18th Avenue and West Lacey E
LEMOORE, CA 93245
EDR Inquiry # 5566933.5

**Client Name:**

Partner Engineering and Science, Inc.
2154 Torrance Blvd, Suite 200
Torrance, CA 90501-0000
Contact: Colleen Tubridy

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

***Search Results:***

| Year | Scale | Details | Source |
|---|---|---|---|
| 1950 | 1"=500' | Flight Date: April 15, 1950 | USDA |
| 1954 | 1"=500' | Flight Date: January 01, 1954 | USGS |
| 1974 | 1"=500' | Flight Date: August 01, 1974 | USGS |
| 1976 | 1"=500' | Flight Date: July 01, 1976 | USGS |
| 1984 | 1"=500' | Flight Date: June 09, 1984 | USDA |
| 1994 | 1"=500' | Acquisition Date: May 02, 1994 | USGS/DOQQ |
| 2006 | 1"=500' | Flight Year: 2006 | USDA/NAIP |
| 2009 | 1"=500' | Flight Year: 2009 | USDA/NAIP |
| 2012 | 1"=500' | Flight Year: 2012 | USDA/NAIP |
| 2016 | 1"=500' | Flight Year: 2016 | USDA/NAIP |

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500 1000 2000

N

Key: Subject Property

500
1000
2000
N
Key: Subject Property

Aerial Photograph Year: 1974

500 1000 2000

N

Key: Subject Property

**APPENDIX B: AERIAL PHOTOGRAPHS**

**Project No. 19-239283.1**

500 1000 2000

N

Key: Subject Property

**APPENDIX B: AERIAL PHOTOGRAPHS**

**Project No. 19-239283.1**

500 1000 2000

N

Key: Subject Property

500 1000 2000

N

Key: Subject Property

Aerial Photograph Year: 2006

**APPENDIX B: AERIAL PHOTOGRAPHS**

**Project No. 19-239283.1**

500 1000 2000

Key: Subject Property

500 1000 2000

N

Key: Subject Property

APPENDIX B: AERIAL PHOTOGRAPHS
Project No. 19-239283.1

N

Key: Subject Property

Semas Property

18th Avenue and West Lacey Boulevard

LEMOORE, CA 93245

Inquiry Number: 5566933.3

February 20, 2019

# Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

# Certified Sanborn® Map Report

02/20/19

| Site Name: | Client Name: |
|---|---|
| Semas Property | Partner Engineering and Science, Inc. |
| 18th Avenue and West Lacey E | 2154 Torrance Blvd, Suite 200 |
| LEMOORE, CA 93245 | Torrance, CA 90501-0000 |
| EDR Inquiry # 5566933.3 | Contact: Colleen Tubridy |

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The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

## *Certified Sanborn Results:*

**Certification #** 6342-4A69-BEFF

**PO #** 19-239283.1

**Project** 19-239283.1

**UNMAPPED PROPERTY**

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Sanborn® Library search results

Certification #: 6342-4A69-BEFF

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- ✓ Library of Congress
- ✓ University Publications of America
- ✓ EDR Private Collection

*The Sanborn Library LLC Since 1866™*

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PARTNER
Engineering and Science, Inc.

February 25, 2019

Kings County Environmental Health Services
330 Campus Drive
Hanford, California 93230

Phone: (559) 584-1411
Fax: (559) 584-6040

Subject: Records Review Request

To Whom It May Concern:

Partner Engineering and Science, Inc., is conducting an environmental site assessment of a property located in Lemoore, California. As part of our project research, I would like to request to review any files pertaining to hazardous substance CUPA records, AST, UST, LUST, Site Mitigation, releases or incidents the environmental health department may have for the following property:

- Semas Property at 18th Avenue and West Lacey Boulevard, Lemoore, CA and APN 021-030-057-000

Please contact me at (559) 999-4211 or at samezcua@partneresi.com with any pertinent information you have so that I may schedule a file review if necessary. The favor of your reply whether you have records or not is greatly appreciated at the previously mentioned email address.

Thank you in advance for your assistance with this request.

Sincerely,

Sheryl A Amezcua

Sheryl A. Amezcua
Project Scientist

Central Valley, California
D: 559-553-6635| F: 559-702-6522 | C: 559-999-4211
5451 North Gates Avenue, Fresno, California 93722

Amezcua, Sheryl

From: PublicRecordsConfirmation@valleyair.org
Sent: Monday, February 25, 2019 7:31 AM
To: Amezcua, Sheryl
Subject: Confirmation of Your Public Records Request

The San Joaquin Valley Air Pollution Control District has received your Public Records Request and it is currently being processed.

The Control Number for this request is 'C-2019-2-71'.

When calling or emailing the District about this request please include the Control Number assigned to this request.
For more information about the Air District, call a regional office in Fresno (559-230-6000), Modesto (209-557-6400) or Bakersfield (661-392-5500).

California Department of Conservation

Division of Oil, Gas, and Geothermal Resources - Well Search

**Note: Information about confidential wells is not available on this website.*

**Note: Production and Injection Information is current through 04-27-2018*



## Well Information

**API #** 03100583

**Lease** Kreyenhagen

**Well #** 23-35

**County** Kings [031]

**District** 5

**Operator** Richard S. Rheem, Operator [07288]

**Field** Any Field [000]

**Area** Any Area [00]

| Section | Township | Range | Base Meridian | Well Status | Pool WellTypes | SPUD Date |
|---|---|---|---|---|---|---|
| 35 | 18S | 20E | MD | Plugged & Abandoned | OG | 3/18/1964 |

| GIS Source | Datum | Latitude | Longitude | Map |
|---|---|---|---|---|
| hud | 83 | 36.323611 | -119.777293 | |

Click to get Sum by County: Kings [031] or Field: Any Field [000] or Operator: Richard S. Rheem, Operator [07288]

Get sum by Field-Operator-Lease: Kreyenhagen



# Well Records

FORM 159

STATE OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

2

# REPORT OF WELL ABANDONMENT

Coalinga California

May 15 1964

Mr. Robert W Anderson
1831 Truxtun Avenue
Bakersfield California
Agent for RICHARD S. RHEEM, OPERATOR

DEAR SIR:

Your report of abandonment of Well No. "Kreyenhagen" 23-35,

Sec. 35, T. 18 S, R. 20 E, M.D. B. & M., ——— field,

Kings County, dated April 1, 1964, has been

examined in conjunction with records filed in this office.

A review of the reports and records shows that the requirements of this Division, which are based on all information filed with it, have been fulfilled.

Blanket Bond
FLH:ef
cc: Company
Conservation Committee

E. R. MURRAY-AARON
*State Oil and Gas Supervisor*

By C. H. Corwin
*Deputy Supervisor*

79185 1-63 6M SPO

MAP & BOOK

STATUS

Completed Producing ____
Recompleted Producing ____
Completed Abandoned ✓
Uncompleted Abandoned ✓
Idle ____

RECORDS

Received | | Needed
---|---|---
✓ | Well Summary |
✓ | History |
✓ | Log & Core |
✓ Lge __ Sm | Elec. Log(s) | __ Lge __ Sm
 | Direct. Survey |
 | Other |

Location ✓
Elevation ✓
Release Bond ____
Hold Bond ✓ Reason Blanket
Final letter ✓
150b ____
170 ____
121 ____
card ____

OK
5-22-24

MBB
5-22-24

Form 19

FORM 100

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

# DIVISION OF OIL AND GAS

## WELL SUMMARY REPORT

SUBMIT IN DUPLICATE

2

Operator Richard S. Rheem, Operator Well No. "Kreyenhagen" 23-35

Sec. 35, T. 18S, R. 20E, MD B. & M. Field Kings County.

Location 1650 feet south and 990 feet east from the northwest corner of Section 35
(Give location from property or section corner or street center line)

Elevation of ground above sea level 231 feet (243.4 KB)

All depth measurements taken from top of Kelly bushing which is 12.4 feet above ground.
(Derrick Floor, Rotary Table or Kelly Bushing)

In compliance with Sec. 3215, of the Public Resources Code, the information given herewith is a complete and correct record of the present condition of the well and all work done thereon, so far as can be determined from all available records.

Date April 1, 1964 Signed Robert W. Anderson

W. G. Bruer xxxxxxx Geologist W. S. McBurnie xxxxxxxx Engineer Title Agent
(President, Secretary or Agent)

Commenced drilling March 18, 1964

Completed drilling March 28, 1964

Total depth 9090' Plugged depth 2520'-2410'
560' - 440'
10' - 0'

Junk none

| GEOLOGICAL MARKERS | DEPTH |
|---|---|
| Top Kreyenhagen Sh | 8332 (E.L.) |

Geologic age at total depth: Cretaceous

Commenced producing abandoned (Date) xxxxxxxxxxxxxxxxxxx (Cross out unnecessary words)

Name of producing zone none

| | Clean Oil bbl. per day | Gravity Clean Oil | Per Cent Water including emulsion | Gas Mcf per day | Tubing Pressure | Casing Pressure |
|---|---|---|---|---|---|---|
| Initial production | Never produced | | | | | |
| Production after 30 days | - - | | | | | |

CASING RECORD (Present Hole)

| Size of Casing (A. P. I.) | Depth of Shoe | Top of Casing | Weight of Casing | New or Second Hand | Seamless or Lapweld | Grade of Casing | Size of Hole Drilled | Number of Sacks of Cement | Depth of Cementing if through perforations |
|---|---|---|---|---|---|---|---|---|---|
| 10 3/4" | 510' | 0 | 45# | Used | Lapweld | R-1 | 15" | 242 | - - |

PERFORATED CASING
(Size, top, bottom, perforated intervals, size and spacing of perforation and method.)

None

DIVISION OF OIL AND GAS
RECEIVED
MAY 14 1964
COALINGA, CALIFORNIA

Electrical Log Depths 9090' to 510' (Attach Copy of Log)

SPO

FORM 103

SUBMIT IN DUPLICATE

STATE OF CALIFORNIA

DEPARTMENT OF NATURAL RESOURCES

# DIVISION OF OIL AND GAS



## History of Oil or Gas Well

OPERATOR Richard S. Rheem, Operator FIELD

Well No. "Kreyenhagen" 23-35, Sec. 35, T. 18S, R. 20E, MD B. & M.

Date April 1, 1964 Signed R. W. Anderson

1831 Truxtun Avenue
Bakersfield, California FA 7-5753 Title Agent
(Address) (Telephone Number) (President, Secretary or Agent)

It is of the greatest importance to have a complete history of the well. Use this form to report a full account of all important operations during the drilling and testing of the well or during re-drilling, altering of casing, plugging, or abandonment with the dates thereof. Be sure to include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests, shooting and initial production data.

Date

March 1964

17 Newton Drilling Company, contractor, moved in and started rigging up.

18 Finished rigging up. Spudded at 3:00 p.m. with 15" bit and drilled to 510'. Ran 25 joints or 513' (including shoe) of 10 3/4" 45# R-1 casing equipped with Halliburton guide shoe.

510' Sand

Survey: 510' 0° 15'

19 Cemented around shoe at 510' with 92 sacks of Class A cement premixed with 10% gel, followed by 150 sacks Class A treated with 2% calcium chloride. Displaced one top wood plug with 277 cubic feet mud. Had cement returns at surface. Cement in place at 1:30 a.m. Landed casing, instlled casinghead and BOP equipment. Tested BOP equipment with 1000# for 15 minutes, OK. Drilled out plug cement and shoe with 9 7/8" bit and drilled ahead.

2235' Sand

Survey: 1983' 0° 45'

20 4691' Sand

Surveys: 2967' 0° 15'
4535' 0°45'

21 Reduce 9 7/8" hole to 8 3/4" at 5510'. Working on torque converter, 10½ hours.

5510' Sand

Survey: 5140' 1° 00'

22 Working on torque converter and changing drill collars, 16 hours. Installed formation logging unit. Drilled ahead in 8 3/4" hole.

5925' Shale and sand

FORM 103

SUBMIT IN DUPLICATE

STATE OF CALIFORNIA

DEPARTMENT OF NATURAL RESOURCES

# DIVISION OF OIL AND GAS



## History of Oil or Gas Well

OPERATOR Richard S. Rheem, Operator FIELD

Well No. "Kreyenhagen" 23-35, Sec. 35, T. 18S, R. 20E, MD B. & M.

Date April 1, 1964 Signed Robert W. Anderson

1831 Truxtun Avenue
Bakersfield, California (Address) FA 7-5753 (Telephone Number) Title Agent (President, Secretary or Agent)

It is of the greatest importance to have a complete history of the well. Use this form to report a full account of all important operations during the drilling and testing of the well or during re-drilling, altering of casing, plugging, or abandonment with the dates thereof. Be sure to include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests, shooting and initial production data.

March 1964
Date

23 7237' Shale and sand

Surveys: 5925' 0° 30'
6702' 0° 00'

24 8000' Shale and sand

Surveys: 7575' 0° 15'

25 8519' Shale and sand

Surveys: 8120' 0° 30'
8519' 0° 45'

26 Drilled to 9090' Total Depth at 1:30 p.m. Conditioned hole for electric log. Schlumberger tools would not go to bottom. Ran back in with 8 3/4" bit.

9090' TD. Shale and sand

Survey: 9090' 0° 15'

27 Conditioned hole for electric log. Ran Schlumberger IES, sidewall sampler, and dipmeter.

Hung drill pipe at 2520' and displaced 100 sacks Class G cement treated with 2% calcium chloride with 120 cubic feet of mud; in place at 11:20 p.m.

28 9090' TD

Located top of plug at 2410' at 3:30 a.m. Location and hardness approved by Division of Oil and Gas. Hung drill pipe at 560' and displaced 75 sacks Class G cement treated with 2% calcium chloride with 20 cubic feet of mud, in place at 5:10 a.m. Located top of plug at 440' at 8:30 a.m. Location and hardness witnessed and approved by Operator.

Plugged top 10' of surface casing with cement. Welded steel plate on surface casing. Hole abandoned in this condition.

RICHARD S. RHEEM, OPERATOR - "Kreyenhagen" 23-35

Sec 35-18S/20E
MDB&M

SCHLUMBERGER SIDEWALL SAMPLES

| | | |
|---|---|---|
| 8301' | 2" | Sand, light to medium grey, fine, fair sorting, scattered dark grey and black grains, fair to good permeability, no odor, stain or fluorescence. |
| 8279' | 2" | Sand, light grey, fine to medium. Slightly Kaolinitic, probably good permeability. No odor, stain or fluorescence. |
| 8235' | 2" | Sand, oil spotted. Light grey with light brown spotty oil stains. Fine to coarse. Fairly clean. Good permeability. Weak to fair petroleum odor. Oil stained spots fluoresce dull canary yellow. Quick amber cut. |
| 8231' | | No recovery. Pulled off. |
| 8221' | 2" | Silty sand. Light medium grey. Very fine with common biotite. Low permeability. No odor, stain, cut or fluorescence. |
| 7668' | 2" | Sand. Light greenish grey. Coarse. Fairly clean. Excellent permeability. No odor, stain, cut or fluorescence. |
| 7630½' | 2" | Sand. Medium light greenish grey. Fine, somewhat silty. Grades to sandy green clay stone at one end. Probably low permeability to tight. No odor or stain. No visible fluorescence. Light straw visible cut fluoresces very pale murky yellow. |
| 7619½' | 2" | Silty sand. Grey green. Very fine. Silty. Some interstitial green clay. Very low permeability to tight. |
| 7610' | 2" | Silty sand as at 7619½', but somewhat cleaner. |
| 7608' | 2" | Silty sand as at 7610'. |
| 7562' | 2" | Sand. Light greenish grey. Medium to very coarse with occasional grits. Slightly Kaolinitic. Occasional spots of brown, dry, oil staining. Probably excellent permeability. No petroleum odor. Clear cut has faint murky fluorescence. |
| 7534' | 2" | Sand. Light grey with greenish cast. Very fine. Silty. Low permeability. No odor, stain or fluorescence. |
| 7517' | 2" | Sand. Light grey with greenish cast. Fine to medium. Fairly clean. Good permeability. No odor, stain or fluorescence. |
| 7487½' | 1 3/4" | Silty sand. Light greenish grey. Silty with some interstitial clay. Firm. Tight. No odor, stain or fluorescence. |
| 7180½' | 2" | Sand. Light grey with greenish cast. Coarse to very coarse. Scattered grits. Excellent permeability. No odor, stain or fluorescence. |

FORM 109-D

CALIFORNIA RESOURCES AGENCY
DEPARTMENT OF CONSERVATION

# DIVISION OF OIL AND GAS

## Special Report on Operations Witnessed

No. T 564-85

Mr. Robert W Anderson
1831 Truxtun Ave
Bakersfield California
Agent for RICHARD S. RHEEM, OPERATOR

Coalinga Calif.
March 31 1964

DEAR SIR:

Operations at well No. "Kreyenhagen" 23-35, Sec. 35, T. 18S, R. 20E, M D B & M. --- Field, in Kings County, were witnessed on March 28, 1964 Mr. F. L. Hill, representative of the supervisor was present from 3:00 a.m. to 5:00 a.m. There were also present M. Fillmore, Drilling Foreman (Newton Drilling Co.)

Present condition of well: 10-3/4" cem. 510'. T.D. 9090'. Plugged with cement 2520'-2410' and 560'-388'±.

The operations were performed for the purpose of plugging the hole in the process of abandonment.

Mr. Fillmore reported:

1. A 9-7/8" hole was drilled to 5510', and an 8-3/4" to 9090'.
2. No oil or gas shows were encountered.
3. On March 28, 1964, 100 sacks of cement was pumped into the hole through 4" drill pipe hanging at 2520', filling to 2410'.

THE INSPECTOR NOTED:

1. The cement plug at 2410' supported 2 tons of the weight of the drill pipe.
2. On March 28, 1964, 75 sacks of cement was pumped into the hole through 4" drill pipe hanging at 560', calculated to fill to 388'±.

THE CEMENTING OPERATIONS ARE APPROVED.

FLH:fd
cc: Company

E. R. MURRAY-AARON
State Oil and Gas Supervisor

By C H Corwin Deputy



86313 4-63 15M SPO

FORM 111

STATE OF CALIFORNIA
DEPARTMENT OF CONSERVATION

# DIVISION OF OIL AND GAS

## REPORT ON PROPOSED OPERATIONS No. P 564-139

Mr. Robert W Anderson
1831 Truxtun Ave
Bakersfield California
Agent for RICHARD S. RHEEM, OPERATOR

Coalinga Calif.
March 31 1964

DEAR SIR:

Your proposal to abandon Well No. "Kreyenhagen" 23-35, Section 35, T. 18S, R. 20E, M D B. & M., -- Field, Kings County, dated Mar 27 1964, received Mar 30 1964, has been examined in conjunction with records filed in this office. Present conditions as shown by the records and the proposal are as follows:

THE NOTICE STATES:
"THE PRESENT CONDITION OF THE WELL IS:
1. Total Depth: 9090'
2. Complete casing record, including plugs:
   (a) 10-3/4" csg. cem. at 510' in 15" hole w/92 sx w10% gel followed by 150 sx treated w/2% $CaCl_2$
   (b) 9-7/8" hole drilled to 5510' and 8-3/4" hole drilled to 9090'
   (c) No oil or gas showings were found
3. Last Produced Never Produced
4. Oil or Gas showings and results of tests: None
5. Stratigraphic markers and depths:
   Top Kreyenhagen 8332'
6. Formation at bottom: Cretaceous
7. Base of fresh water sands: 2470' "

PROPOSAL:
"THE PROPOSED WORK IS
1. Hang drill pipe at 2520' and pump in and equalize 100 sax class G cement treated with 2% $CaCl_2$.
   Your Division to witness and approve location and hardness of top of plug at or above 2420'
2. Hand drill pipe at 560' and pump in and equalize 75 sax of Class G cement. Operator to locate top of plug at or above 460'.
3. Plug top 10' of surface casing with cement and weld on steel plate.
4. Abandon hole in this condition."

DECISION:
THE PROPOSAL IS APPROVED.

Surface Insp. 4-?-64
steel plate welded on casing at base of cellar. No oil or gas seepage.

Blanket Bond
CHC:fd
cc: Company

E. R. MURRAY-AARON, State Oil and Gas Supervisor

By C. H. Corwin, Deputy



79186 1-63 50M SPO

FORM 108. 60287 3-62 10M ② SPO

STATE OF CALIFORNIA
DEPARTMENT OF CONSERVATION

# DIVISION OF OIL AND GAS

## Notice of Intention to Abandon Well

**This notice must be given at least five days before work is to begin; one copy only**

Bakersfield Calif. March 27, 19 64

DIVISION OF OIL AND GAS

In compliance with Division 3, Public Resources Code, notice is hereby given that it is our intention to abandon Well No. "Kreyenhagen" #23-35, Sec. 35, T. 18 S, R. 20 E., M.D.B. & M., Field, Kings County, commencing work on March 27, 19 64

THE PRESENT CONDITION OF THE WELL IS:

1. Total Depth: 9090'

2. Complete casing record, including plugs:

(a) 10-3/4" csg. cem. at 510' in 15" hole w/92 sx w/10% get followed by 150 sx treated w/2% $CaCl_2$

(b) 9-7/8" hole drilled to 5510' and 8-3/4" hole drilled to 9090'

(c) No oil or gas showings were found

3. Last Produced Never Produced (Date) (Oil, B/D) (Water, B/D)

ADDITIONAL DATA FOR DRY HOLE

4. Oil or Gas showings and results of tests:

None

5. Stratigraphic markers and depths:

Top Kreyenhagen 8332'

6. Formation at bottom: Cretaceous

7. Base of fresh water sands: 2470'

THE PROPOSED WORK IS

1. Hang drill pipe at 2520' and pump in and equalize 100 sax class G cement treated with 2% $CaCl_2$.
   Your Division to witness and approve location and hardness of top of plug at or above 2420'
2. Hand drill pipe at 560' and pump in and equalize 75 sax of Class G cement. Operator to locate top of plug at or above 460'.
3. Plug top 10' of surface casing with cement and weld on steel plate.
4. Abandon hole in this condition.

Reference to file of data
card ✓ 131 ✓ ✓

1831 Truxtun Avenue, Bakersfield
(Address)

FA 7-5753
(Telephone No.)

RICHARD S. RHEEM, OPERATOR
(Name of Operator)

By Robert W. Anderson
Robert W. Anderson



ADDRESS ONE COPY OF NOTICE TO DIVISION OF OIL AND GAS IN DISTRICT WHERE WELL IS LOCATED

Form 136A

MEMORANDUM OF TELEPHONE OR PERSONAL CONVERSATION
(Proposed Well Operations)

Operator Richard S. Rheem, Operator Well No. "Kreyenhagen" 23-35

Field — Kings Co. Sec. 35 T. 18S R. 20E M.D. B&M

~~personal~~

A telephone conversation was held, concerning above well, with Mr. Bill McBurney

Engineer for above operator March 27 1964, at 11:00 P M.

Details of the conversation were as follows:

Total depth 9090 Plugs —

Casing record 10 3/4" cem. 510

Oil or gas showings No shows or tests

Results of tests —

Stratigraphic markers Top Kreyenhagen 8332

Geologic age at bottom Cret ? Base of fresh water 2470

Operator proposes the following work:

1. Hang drill pipe @ 2520 & pump in 100 sx locate top @ 2420 or above D.O.G. to witness loc & Hard.
2. Plug shoe from 560–460 D.O.G. to witness placing of plug
3. 10' cem. surf. plug D.O.G. to check

Additional requirements outlined:

Test of W.S.O. to be witnessed by D.O.G. at — By operator at —

Plugs to be located by D.O.G. at 2420 By operator at 460

Notice to be filed immediately (X) Yes ( ) Not necessary

Other data

(Signed) John Sullivan

Title Assoc.

FORM 109-D

CALIFORNIA RESOURCES AGENCY
DEPARTMENT OF CONSERVATION

# DIVISION OF OIL AND GAS

## Special Report on Operations Witnessed

No. T 564-75

Mr. Robert W Anderson
1831 Truxtun Ave
Bakersfiad California
Agent for RICHARD S. RHEEM, OPERATOR

Coalinga Calif.
March 26 1964

DEAR SIR:

Operations at well No. "Kreyenhagen" 23-35, Sec. 35, T. 18S, R. 20E, MD B & M. "" Field, in Kings County, were witnessed on March 25, 1964. Mr. John Sullivan, representative of the supervisor was present from 5:00 p.m. to 5:30 p.m. There were also present A. Howard, Drilling Foreman (Newton Drilling Co.)

Present condition of well: 10-3/4" cem. 510', T.D. 8475' (Drilling)

The operations were performed for the purpose of inspecting blow-out prevention equipment and installation.

Mr. "" reported:

THE BLOW-OUT PREVENTION EQUIPMENT AND INSTALLATION ARE APPROVED.

JCS:fd
cc: Company

E. R. MURRAY-AARON
State Oil and Gas Supervisor

By C H Corwin Deputy



66313 4-63 15M SPO

MEMO

Form No. 109-D

B.O.P.E.

No. T

Company Richard S. Rheem, Operator Date

Operations at well No. "Kreyenhagen" 23-35 Sec. 35 T. 18S R. 20E M.D B&M. Field Kings County, were witnessed on March 25, 1964 Mr. John Sullivan, representative of the supervisor was present from 5⁰⁰ PM to 5³⁰ PM There were also present D. Howard, Drilling Foreman (Newton Drilling Co.)

Present condition of well: 10 3/4" cem. 510, T.D. 8475' (Drilling)

The operations were performed for the purpose of inspecting blow-out prevention equipment and installation.

Mr. Howard reported:

1. On ______ 1964, 10 3/4", 32.75 lb. casing was cemented in a 15 " hole at 510 ' with ____ sacks/~~cu. ft.~~ of cement. Premixed with 10% gel
2. Cement returned, did ~~not return~~ to the surface. followed by 150 sacks of cement.

___. An additional ___ sacks - cu. ft. of cement was placed around the ____ " casing from the surface.

3. An 8 3/4 " hole was being drilled ahead at 8475 '

THE INSPECTOR NOTED that the well was equipped with the following blow-out prevention equipment:

1. A Shaffer manually and hydraulically operated double control gate for closing in the well with the drill pipe/~~tubing~~ out of the hole, and for closing around the 4 " drill pipe/~~tubing~~.
2. A Hydrill blow-out preventer for closing in the well with the drill pipe/~~tubing~~ out of the hole, and for closing around the 4 " drill pipe/~~tubing~~.

___. A ______ manually and hydraulically operated control gate for closing in the well with the drill pipe/tubing out of the hole.

___. A ______ manually and hydraulically operated control gate for closing around the ____ " drill pipe/tubing.

___. A ______ blow-out preventer for closing around the ____ " drill pipe/tubing.

3. The controls for the above equipment were located outside the derrick and on the derrick floor.
4. A 2 " mud fill-up line with a 2 " high pressure stopcock into the 10 3/4 " casing below the above equipment.
5. A high pressure Stopcock on the kelly/~~goose neck/stand pipe~~.

___. Remarks

THE BLOW-OUT PREVENTION EQUIPMENT AND INSTALLATION ARE APPROVED.

9 7/8 x 8 3/4" sholder @ 5510

FORM 111

STATE OF CALIFORNIA
DEPARTMENT OF CONSERVATION

# DIVISION OF OIL AND GAS



## REPORT ON PROPOSED OPERATIONS

No. P 564-117

Mr. Robert W Anderson
1831 Truxtun Avenue
Bakersfield California
Agent for RICHARD S. RHEEM, OPERATOR

Coalinga Calif.
March 16 1964

DEAR SIR:

Your proposal to drill Well No. "Kreyenhagen" 23-35, Section 35, T. 18S., R. 20E., M.D. B. & M., ——— Field, Kings County, dated March 13, 1964, received March 16 1964, has been examined in conjunction with records filed in this office. Present conditions as shown by the records and the proposal are as follows:

THE NOTICE STATES:

"Legal description of mineral-right lease, consisting of 160 acres, is as follows: Northwest one quarter (NW¼) of Section 35, Township 18 South, Range 20 East, M. D. B. & M.

Do mineral and surface leases coincide? Yes

Location of Well: 1650 feet South along section line and 990 feet East at right angles to said line from the Northwest corner of section 35, Township 18 South, Range 20 East, M.D.B.&M.

Elevation of ground above sea level 231 feet U.S.G.S. datum.

All depth measurements taken from top of Kelly Bushing which is 12 feet above ground."

PROPOSAL:

"PROPOSED CASING PROGRAM

| Size of Casing Inches A.P.I. | Weight | Grade and Type | Top | Bottom | Cementing Depths |
|---|---|---|---|---|---|
| 10-3/4" | 32.75# | H | 0' | 500' | 500' |
| 5-1/2" | 15-1/2 & 17# | J & N | 0' | 9000' | 9000' |

Intended zone of completion: Zilch and lower zones at various depths

Estimated total depth 9000'

It is understood that if changes in this plan become necessary we are to notify you immediately."

DECISION:

THE PROPOSAL IS APPROVED PROVIDED THAT:

1. The 10-3/4" surface casing shall be cemented with sufficient cement to fill back of this casing from the shoe to the ground surface.
2. Mud fluid of sufficient weight and proper consistency to prevent blow-outs shall be used in drilling, and the column of mud fluid shall be maintained to the surface at all times, particularly while pulling the drill pipe.
3. Adequate blow-out prevention equipment shall be provided and kept ready for operation at all times.
4. For the protection of fresh waters, one of the following operations shall be performed:
   (a) Sufficient cement shall be used at the shoe of the 5½" casing to fill back of this casing to above the base of the fresh water sands, or
   (b) The 5½" casing shall be cemented through perforations at the base of the fresh water sands.
5. This Division shall be consulted regarding the cementing of the 5½" casing before running it into the hole.
6. This Division shall be notified:
   (a) To inspect blow-out prevention equipment prior to drilling below a depth of 1500'.

E. R. MURRAY-AARON, State Oil and Gas Supervisor



By Continued on page 2, Deputy

79186 1-63 50M SPO

STATE OF CALIFORNIA
DEPARTMENT OF CONSERVATION

# DIVISION OF OIL AND GAS

## Report on Proposed Operations

No. P 564-117

RICHARD S. RHEEM, OPERATOR Company



Well No. "Kreyenhagen" 23-35, Section 35, T. 18 S., R. 20 E., M. D. B. & M.,

(b) To witness a test of each possible water shut-off.

Note: Information on file in this office indicates that the base of the usable fresh water deposits should be encountered at a depth of approximately 2500'.

Blanket Bond
JCS:ef
cc: Company

E. R. MURRAY-AARON, State Oil and Gas Supervisor

By C. H. Corwin, Deputy

115 JCS

FORM 111X
56220 1-62 3,500 SPO

FORM 105

STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

P564-H7
2500
E

031-00583

# DIVISION OF OIL AND GAS

## Notice of Intention to Drill New Well

This notice and surety bond must be filed before drilling begins

5

Bakersfield Calif. March 13, 19 64

DIVISION OF OIL AND GAS

In compliance with Section 3203, Division III, Article 4, Public Resources Code, notice is hereby given that it is our intention to commence drilling well No. "Kreyenhagen" 23-35, Sec. 35, T. 18 S., R. 20 E., M. D. B. & M., -- Field, Kings County.

Legal description of mineral-right lease, consisting of 160 acres, is as follows: Northwest one quarter (Attach map or plat to scale) (NW¼) of Section 35, Township 18 South, Range 20 East, M. D. B. & M.

Do mineral and surface leases coincide? Yes X No ____ If answer is no, attach legal description of both surface and mineral leases, and map or plat to scale.

Location of Well: 1650 feet South (Direction) along ~~property~~ section line and 990 feet East (Direction) at right angles to said line from the Northwest ~~property~~ corner of section 35, Township 18 South, Range 20 East, M.D.B.&M.

Elevation of ground above sea level 231 feet U.S.G.S. datum.

All depth measurements taken from top of Kelly Bushing (Derrick Floor, Rotary Table or Kelly Bushing) which is 12 feet above ground.

## PROPOSED CASING PROGRAM

| SIZE OF CASING INCHES A.P.I. | WEIGHT | GRADE AND TYPE | TOP | BOTTOM | CEMENTING DEPTHS |
|---|---|---|---|---|---|
| 10-3/4" | 32.75# | H | 0' | 500' | 500' |
| 5-1/2" | 15-1/2 & 17# | J & N | 0' | 9000' | 9000' |
| | | | | | |

Intended zone(s) of completion: Zilch and lower zones at various depths (Name) (Depth, top and bottom) Estimated total depth 9000'

DIVISION OF OIL AND GAS RECEIVED MAR 16 1964 COALINGA, CALIFORNIA

It is understood that if changes in this plan become necessary we are to notify you immediately.

Address 1831 Truxtun Avenue
Bakersfield, California

Telephone Number FAirview 7-5753

RICHARD S. RHEEM, OPERATOR
(Name of Operator)

By R. W. Anderson

Type of Organization Individual
(Corporation, Partnership, Individual, etc.)

SPO

**RICHARD S. RHEEM** OPERATOR

OIL AND GAS EXPLORATION, DEVELOPMENT AND PRODUCTION

1831 Truxtun Avenue
Bakersfield, California

March 13, 1964

Division of Oil and Gas
466 North 5th Street
Coalinga, California

Gentlemen:

Attached is a "Notice of Intention to Drill New Well" pertaining to Richard S. Rheem, Operator's well "Kreyenhagen" 23-35 to be located in Section 35, Township 18 South, Range 20 East, M.D.B.&M., Kings County, California.

It is intended that the drilling of this well will be covered by our blanket bond on file with your Division.

Very truly yours,

Robert W. Anderson

mjt
Attach.



San Francisco 4, Russ Bldg., YUkon 6-1646 | Los Angeles 17, 643 So. Flower St., MAdison 7-4725 | Bakersfield, 1831 Truxton Ave., FAirview 3-9292

## Property Overview , LEMOORE, CA 9

### Owner and Geographic Information

**Primary Owner:** SEMAS STEPHEN L FAM GST EXE TRS

**Secondary Owner:**

**Mail Address:** 111 RENNELL ST , MORRO BAY, CA 93442-3031

**Site Address:** , LEMOORE, CA 93245

**APN:** 021-030-057-000 **Lot Number:** **Page / Grid:**

**Housing Tract Number:**

**Legal Description:** **Legal Brief Description:** PTN OF NW 1/4 35/18/20

### Property Details

| | | | | | |
|---|---|---|---|---|---|
| **Bedrooms:** | 0 | **Year Built:** | | **Square Feet:** | |
| **Bathrooms:** | 0 | **Garage:** | | **Lot Size:** | 155.85 AC |
| **Total Rooms:** | | **Fireplace:** | | **Number of Units:** | 0 |
| **Zoning:** | AL10 | **Pool:** | | **Use Code:** | Rural/Agricultural Residence |

### Sale Information

| | | | |
|---|---|---|---|
| **Transfer Date:** | 05/24/2012 | **Seller:** | PEDERSEN, MARDELL B; SEMAS, STEPHEN L |
| **Transfer Value:** | $0.00 | **Document#:** | 1209567 |
| **Cost/Sq Feet:** | | | |

### Assessment and Taxes

| | | | | | |
|---|---|---|---|---|---|
| **Assessed Value:** | $366,740.00 | **Percent Improvement:** | 12.85% | **Homeowner Exemption:** | |
| **Land Value:** | $319,630.00 | **Tax Amount:** | $5,593.64 | **Tax Rate Area:** | 74-001 |
| **Improvement Value:** | $47,110.00 | **Tax Status:** | | **Tax Account ID:** | |
| **Market Improvement Value:** | | **Market Land Value:** | | **Market Value:** | |

## ENVIRONMENTAL SITE ASSESSMENT QUESTIONNAIRE

Please complete to the best of your knowledge. For those questions that are not applicable, please respond with an "N/A". For those questions that are unknown, please respond with "unknown".

### 1. PROPERTY INFORMATION:

| | | |
|---|---|---|
| Property Name: N/A | | |
| Property Address: ~~N/A~~ 184 Lacey ~~Lem~~ | | |
| City Lemoore | State Calif. | Zip 93442 |
| Assessor's Parcel Number 021-030-057 | | |
| Property Owner & Contact Information: Stephen L. Semas 805-459-2545 | | |
| Date Property Owner Purchased: inherited 2011 | | |
| Key Site Manager & Contact Information: Brandon Silveira 1-559 816-2264 | | |

### 2. COMPLETED BY

| | |
|---|---|
| Signature Stephen L. Semas | Date 2/25/19 |
| Printed Name STephen L. Semas | Relation to Subject Property OWner |

### 3. PREVIOUS INVESTIGATIONS

Have any previous environmental investigations been performed at the property, including Phase I ESAs, Phase II Subsurface Investigations, Remediation, Asbestos or Lead-Based Paint surveys? NO

(If yes, please provide copies)

### 4. PROPERTY DESCRIPTION

Property Size: 155.86 Number of Building(s): 0

Size of Building(s): 0

Date of Construction: 0

Property Type: (please circle)

Multi-Family Hotel Mobile Home Park Retail/Commercial Industrial Office

Other: Farming

Please provide Rent Roll if Applicable.

Historical Use of Property: Farming

### 5. SURROUNDING PROPERTY USES

| Direction | Use |
|---|---|
| North | N/A |
| South | |
| East | |
| West | |

Are you aware of any potential environmental concerns associated with surrounding properties?

________ YES ____✓____ NO

If yes, please describe: ______________________________

6. **Utilities & Services**

Please provide the name of the utility or contractor providing the following:

| | | | |
|---|---|---|---|
| Electric | P.G.E. | Bio-hazardous Waste | N/A |
| Gas | N/A | Elevator Maintenance | N/A |
| Potable Water | N/A | Used Grease | N/A |
| Sanitary Sewer | N/A | Hazardous Waste | N/A |

7. **On Site Operations**

| Are you aware of any of the following conditions, either past or present, on the property? | | |
|---|---|---|
| **Condition** | **Response** | **If yes, please describe** |
| 1. Stored Chemicals | ☐ Yes ☑ No | |
| 2. Underground Storage Tanks | ☐ Yes ☑ No | |
| 3. Aboveground Storage Tanks | ☑ Yes ☐ No | DieSAL |
| 4. Spills or Releases | ☐ Yes ☑ No | |
| 5. Dump Areas/Landfills | ☐ Yes ☑ No | |
| 6. Waste Treatment Systems | ☐ Yes ☑ No | |
| 7. Clarifiers/Separators | ☐ Yes ☑ No | |
| 8. Vents/Odors | ☐ Yes ☑ No | |
| 9. Floor Drains/Sumps | ☐ Yes ☑ No | |
| 10. Stained Soil | ☐ Yes ☑ No | |
| 11. Electrical Transformers | ☐ Yes ☑ No | |
| 12. Hydraulic Lifts/Elevators | ☐ Yes ☑ No | |
| 13. Dry Cleaning Operations | ☐ Yes ☑ No | |
| 14. Oil/Gas/Water/Monitoring Wells | ☐ Yes ☑ No | |
| 15. Environmental Permits | ☐ Yes ☑ No | |

## PHASE I ENVIRONMENTAL SITE ASSESSMENT QUESTIONNAIRE

The following questionnaire is required by the ASTM Standard E 1527-13, which adheres to the All Appropriate Inquiries (AAI) Rule (United States Environmental Protection Agency) (40 CFR 312).

As defined by ASTM, the User of the report is the *"party seeking to use Practice E 1527 to complete an environmental site assessment of the property. A user may include, without limitation, a potential purchaser of property, a potential tenant of property, an owner of property, a lender, or a property manager. The user has specific obligations for completing a successful application of this practice."*

| | |
|---|---|
| PROPERTY ADDRESS: | 18 th & Lacey |
| PROPERTY CITY, STATE ZIP: | Lemoore Ca 93245 |

1. **Environmental liens that are filed or recorded against the property (40 CFR 312.25)**

   Did a search of recorded land title records (or judicial records) identify any environmental liens filed or recorded against the property under federal, tribal, state or local law?

   ☐ YES ☒ NO

2. **Activity and use limitations (AULs) that are in place on the property or that have been filed or records against the property (40 CFR 312.26(a)(1)(v) and (vi))**

   Did a search of recorded land title records (or judicial records) identify any AULs, such as engineering controls, land use restrictions or institutional controls that are in place at the property and/or have been filed or recorded against the property under federal, tribal, state or local law?

   ☐ YES ☒ NO

3. **Specialized knowledge or experience of the person seeking to qualify for the LLP (40 CFR 312.28)**

   Do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?

   ☐ YES ☒ NO

4. **Relationship of the purchase price to the fair market value of the property if it were not contaminated (40 CFR 312.29)**

Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?

☑ YES ☐ NO

---

5. **Commonly known or reasonably ascertainable information about the Property (40 CFR 312.30)**

Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases?

☐ YES ☑ NO

---

a. Do you know the past uses of the property?

☑ YES ☐ NO

---

b. Do you know of specific chemicals that are present or once were present at the property?

☐ YES ☑ NO

---

c. Do you know of spills or other chemical releases that have taken place at the property?

☐ YES ☑ NO

---

d. Do you know of any environmental cleanups that have taken place at the property?

☐ YES ☑ NO

---

e. Do you have any prior knowledge that the property was developed as a gas station, dry cleaner, manufacturing/industrial facility in the past?

☐ YES ☑ NO

---

f. Are you aware of historical use of hazardous materials or petroleum products used or present on the property?

☐ YES ☑ NO

---

g. Do you know if the property is currently or was formerly equipped with underground storage tanks (USTs) or septic tanks?

☐ YES ☑ NO

h. Do you know of any past, threatened or pending lawsuits or administrative proceedings concerning a release or threatened release of any hazardous substance or petroleum products involving the property by any owner or occupant of the property?

☐ YES ☑ NO

**6. The degree of obviousness of the presence or likely presence of contamination at the** property, **and the ability to detect the contamination by appropriate investigation (40 CFR 312.31)**

Based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of releases at the property?

☐ YES ☑ NO

Signature of User/Person Interviewed: Stephen L Semas

Name of User/Person Interviewed: STephen L. SAMAS

Title/Relationship to Property: OWNER

Phone Number/Email: 805-459-3545 OCEANviewFurniture@SBCglobal.net

Date: 2-25-19

Contact for additional information:

Name: Steve Semas

Relationship to Property: OWNER

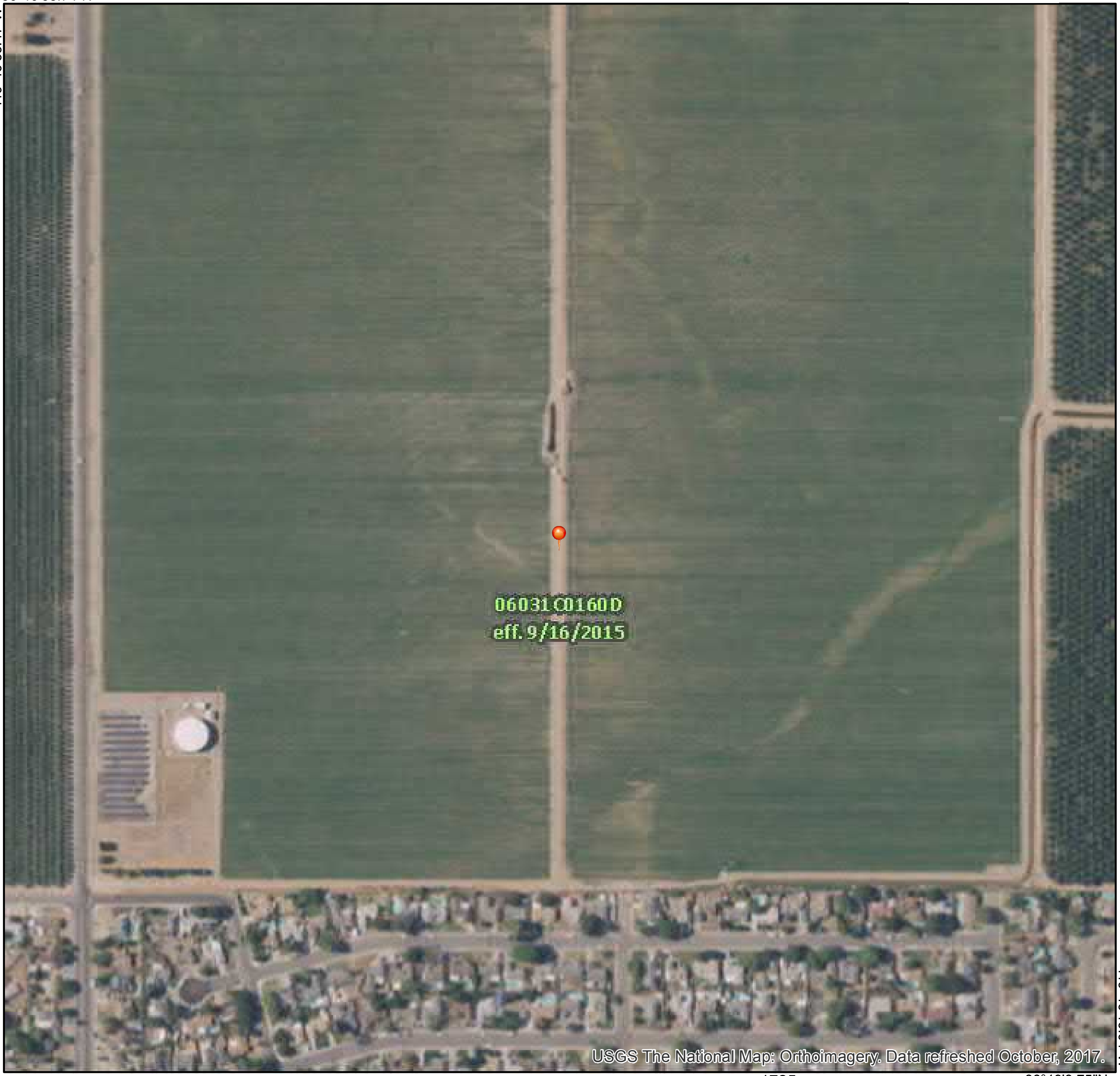
Phone Number/Email: SAME AS Above

# National Flood Hazard Layer FIRMette

FEMA

36°19'38.74"N

119°46'53.47"W




119°46'16.01"W

36°19'9.75"N

Feet 0 250 500 1,000 1,500 2,000

1:6,000 

## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

**SPECIAL FLOOD HAZARD AREAS**
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

**OTHER AREAS OF FLOOD HAZARD**
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

**OTHER AREAS**
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

**GENERAL STRUCTURES**
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

**OTHER FEATURES**
- B 20.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- 8 Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

**MAP PANELS**
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 3/1/2019 at 1:20:42 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

U.S. Fish and Wildlife Service

National Wetlands Inventory

# Wetlands

March 1, 2019

**Wetlands**

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.



National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

# APPENDIX C: REGULATORY DATABASE REPORT

**Semas Property**
18th Avenue and West Lacey Boulevard
LEMOORE, CA 93245

Inquiry Number: 5566933.2s
February 20, 2019

# The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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**Map Findings** 8
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**GEOCHECK ADDENDUM**

**Physical Setting Source Addendum** A-1
**Physical Setting Source Summary** A-2
**Physical Setting SSURGO Soil Map** A-5
**Physical Setting Source Map** A-8
**Physical Setting Source Map Findings** A-10
**Physical Setting Source Records Searched** PSGR-1

***Thank you for your business.***
Please contact EDR at 1-800-352-0050
with any questions or comments.

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# EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

**TARGET PROPERTY INFORMATION**

**ADDRESS**

18TH AVENUE AND WEST LACEY BOULEVARD
LEMOORE, CA 93245

**COORDINATES**

| | |
|---|---|
| Latitude (North): | 36.3244380 - 36˚ 19' 27.97'' |
| Longitude (West): | 119.7761800 - 119˚ 46' 34.24'' |
| Universal Tranverse Mercator: | Zone 11 |
| UTM X (Meters): | 250783.1 |
| UTM Y (Meters): | 4023311.0 |
| Elevation: | 234 ft. above sea level |

**USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY**

| | |
|---|---|
| Target Property Map: | 5619120 LEMOORE, CA |
| Version Date: | 2012 |

**AERIAL PHOTOGRAPHY IN THIS REPORT**

| | |
|---|---|
| Portions of Photo from: | 20140619, 20140627 |
| Source: | USDA |

## MAPPED SITES SUMMARY

Target Property Address:
18TH AVENUE AND WEST LACEY BOULEVARD
LEMOORE, CA 93245

Click on Map ID to see full detail.

| MAP ID | SITE NAME | ADDRESS | DATABASE ACRONYMS | RELATIVE ELEVATION | DIST (ft. & mi.) DIRECTION |
|---|---|---|---|---|---|
| 1 | CITY OF LEMOORE WELL | LEMOORE AVENUE & GLE | CERS HAZ WASTE, CERS | Lower | 41, 0.008, SW |
| 2 | PEDERSEN FARMS | 18TH & LACEY BLVD | CUPA Listings | Lower | 54, 0.010, NW |
| 3 | MEADOW LANE ELEMENTA | 252 1/2 MEADOW LN | CUPA Listings | Lower | 638, 0.121, SSW |
| 4 | LEMOORE CEMENTERY | 1441 18 TH AVE | HIST UST | Lower | 896, 0.170, SSW |
| 5 | GATEWAY PLAZA | 1104-1290 NORTH LEMO | CPS-SLIC, CERS | Lower | 2145, 0.406, SSW |
| 6 | 7-ELEVEN #16373 | 1110 LEMOORE N | LUST, HIST CORTESE, CERS | Lower | 2567, 0.486, SSW |
| 7 | CINNAMON DRIVE SCHOO | 500 EAST CINNAMON DR | ENVIROSTOR, SCH, CUPA Listings | Lower | 4599, 0.871, South |

# EXECUTIVE SUMMARY

## TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

## DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

## STANDARD ENVIRONMENTAL RECORDS

***Federal NPL site list***

NPL - National Priority List
Proposed NPL - Proposed National Priority List Sites
NPL LIENS - Federal Superfund Liens

***Federal Delisted NPL site list***

Delisted NPL - National Priority List Deletions

***Federal CERCLIS list***

FEDERAL FACILITY - Federal Facility Site Information listing
SEMS - Superfund Enterprise Management System

***Federal CERCLIS NFRAP site list***

SEMS-ARCHIVE - Superfund Enterprise Management System Archive

***Federal RCRA CORRACTS facilities list***

CORRACTS - Corrective Action Report

***Federal RCRA non-CORRACTS TSD facilities list***

RCRA-TSDF - RCRA - Treatment, Storage and Disposal

***Federal RCRA generators list***

RCRA-LQG - RCRA - Large Quantity Generators
RCRA-SQG - RCRA - Small Quantity Generators
RCRA-CESQG - RCRA - Conditionally Exempt Small Quantity Generator

***Federal institutional controls / engineering controls registries***

LUCIS - Land Use Control Information System
US ENG CONTROLS - Engineering Controls Sites List

# EXECUTIVE SUMMARY

US INST CONTROL - - - - - - - - - Sites with Institutional Controls

***Federal ERNS list***

ERNS - - - - - - - - - - - - - - - - - - - - - - - Emergency Response Notification System

***State- and tribal - equivalent NPL***

RESPONSE - - - - - - - - - - - - - - - - - State Response Sites

***State and tribal landfill and/or solid waste disposal site lists***

SWF/LF - - - - - - - - - - - - - - - - - - - - - Solid Waste Information System

***State and tribal leaking storage tank lists***

INDIAN LUST - - - - - - - - - - - - - - - Leaking Underground Storage Tanks on Indian Land

***State and tribal registered storage tank lists***

FEMA UST - - - - - - - - - - - - - - - - - - Underground Storage Tank Listing
UST - - - - - - - - - - - - - - - - - - - - - - - - - - Active UST Facilities
AST - - - - - - - - - - - - - - - - - - - - - - - - - - Aboveground Petroleum Storage Tank Facilities
INDIAN UST - - - - - - - - - - - - - - - - - Underground Storage Tanks on Indian Land

***State and tribal voluntary cleanup sites***

VCP - - - - - - - - - - - - - - - - - - - - - - - - - Voluntary Cleanup Program Properties
INDIAN VCP - - - - - - - - - - - - - - - - - Voluntary Cleanup Priority Listing

***State and tribal Brownfields sites***

BROWNFIELDS - - - - - - - - - - - - - Considered Brownfieds Sites Listing

**ADDITIONAL ENVIRONMENTAL RECORDS**

***Local Brownfield lists***

US BROWNFIELDS - - - - - - - - - - A Listing of Brownfields Sites

***Local Lists of Landfill / Solid Waste Disposal Sites***

WMUDS/SWAT - - - - - - - - - - - - - - Waste Management Unit Database
SWRCY - - - - - - - - - - - - - - - - - - - - - - Recycler Database
HAULERS - - - - - - - - - - - - - - - - - - - Registered Waste Tire Haulers Listing
INDIAN ODI - - - - - - - - - - - - - - - - - - Report on the Status of Open Dumps on Indian Lands
ODI - - - - - - - - - - - - - - - - - - - - - - - - - - Open Dump Inventory
DEBRIS REGION 9 - - - - - - - - - - Torres Martinez Reservation Illegal Dump Site Locations
IHS OPEN DUMPS - - - - - - - - - - - Open Dumps on Indian Land

***Local Lists of Hazardous waste / Contaminated Sites***

US HIST CDL - - - - - - - - - - - - - - - Delisted National Clandestine Laboratory Register
HIST Cal-Sites - - - - - - - - - - - - - - Historical Calsites Database

# EXECUTIVE SUMMARY

SCH . . . . . School Property Evaluation Program
CDL . . . . . Clandestine Drug Labs
Toxic Pits . . . . . Toxic Pits Cleanup Act Sites
US CDL . . . . . National Clandestine Laboratory Register

***Local Lists of Registered Storage Tanks***

SWEEPS UST . . . . . SWEEPS UST Listing
CERS TANKS . . . . . California Environmental Reporting System (CERS) Tanks
CA FID UST . . . . . Facility Inventory Database

***Local Land Records***

LIENS . . . . . Environmental Liens Listing
LIENS 2 . . . . . CERCLA Lien Information
DEED . . . . . Deed Restriction Listing

***Records of Emergency Release Reports***

HMIRS . . . . . Hazardous Materials Information Reporting System
CHMIRS . . . . . California Hazardous Material Incident Report System
LDS . . . . . Land Disposal Sites Listing
MCS . . . . . Military Cleanup Sites Listing
SPILLS 90 . . . . . SPILLS 90 data from FirstSearch

***Other Ascertainable Records***

RCRA NonGen / NLR . . . . . RCRA - Non Generators / No Longer Regulated
FUDS . . . . . Formerly Used Defense Sites
DOD . . . . . Department of Defense Sites
SCRD DRYCLEANERS . . . . . State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR . . . . . Financial Assurance Information
EPA WATCH LIST . . . . . EPA WATCH LIST
2020 COR ACTION . . . . . 2020 Corrective Action Program List
TSCA . . . . . Toxic Substances Control Act
TRIS . . . . . Toxic Chemical Release Inventory System
SSTS . . . . . Section 7 Tracking Systems
ROD . . . . . Records Of Decision
RMP . . . . . Risk Management Plans
RAATS . . . . . RCRA Administrative Action Tracking System
PRP . . . . . Potentially Responsible Parties
PADS . . . . . PCB Activity Database System
ICIS . . . . . Integrated Compliance Information System
FTTS . . . . . FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS . . . . . Material Licensing Tracking System
COAL ASH DOE . . . . . Steam-Electric Plant Operation Data
COAL ASH EPA . . . . . Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER . . . . . PCB Transformer Registration Database
RADINFO . . . . . Radiation Information Database
HIST FTTS . . . . . FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS . . . . . Incident and Accident Data
CONSENT . . . . . Superfund (CERCLA) Consent Decrees
INDIAN RESERV . . . . . Indian Reservations
FUSRAP . . . . . Formerly Utilized Sites Remedial Action Program

| | |
|---|---|
| UMTRA | Uranium Mill Tailings Sites |
| LEAD SMELTERS | Lead Smelter Sites |
| US AIRS | Aerometric Information Retrieval System Facility Subsystem |
| US MINES | Mines Master Index File |
| ABANDONED MINES | Abandoned Mines |
| FINDS | Facility Index System/Facility Registry System |
| ECHO | Enforcement & Compliance History Information |
| DOCKET HWC | Hazardous Waste Compliance Docket Listing |
| UXO | Unexploded Ordnance Sites |
| FUELS PROGRAM | EPA Fuels Program Registered Listing |
| CA BOND EXP. PLAN | Bond Expenditure Plan |
| Cortese | "Cortese" Hazardous Waste & Substances Sites List |
| DRYCLEANERS | Cleaner Facilities |
| EMI | Emissions Inventory Data |
| ENF | Enforcement Action Listing |
| Financial Assurance | Financial Assurance Information Listing |
| HAZNET | Facility and Manifest Data |
| ICE | ICE |
| HWP | EnviroStor Permitted Facilities Listing |
| HWT | Registered Hazardous Waste Transporter Database |
| MINES | Mines Site Location Listing |
| MWMP | Medical Waste Management Program Listing |
| NPDES | NPDES Permits Listing |
| PEST LIC | Pesticide Regulation Licenses Listing |
| PROC | Certified Processors Database |
| Notify 65 | Proposition 65 Records |
| UIC | UIC Listing |
| UIC GEO | UIC GEO (GEOTRACKER) |
| WASTEWATER PITS | Oil Wastewater Pits Listing |
| WDS | Waste Discharge System |
| MILITARY PRIV SITES | MILITARY PRIV SITES (GEOTRACKER) |
| PROJECT | PROJECT (GEOTRACKER) |
| WDR | Waste Discharge Requirements Listing |
| CIWQS | California Integrated Water Quality System |
| CERS | CERS |
| WIP | Well Investigation Program Case List |
| NON-CASE INFO | NON-CASE INFO (GEOTRACKER) |
| OTHER OIL GAS | OTHER OIL & GAS (GEOTRACKER) |
| PROD WATER PONDS | PROD WATER PONDS (GEOTRACKER) |
| SAMPLING POINT | SAMPLING POINT (GEOTRACKER) |
| WELL STIM PROJ | Well Stimulation Project (GEOTRACKER) |

## EDR HIGH RISK HISTORICAL RECORDS

### *EDR Exclusive Records*

| | |
|---|---|
| EDR MGP | EDR Proprietary Manufactured Gas Plants |
| EDR Hist Auto | EDR Exclusive Historical Auto Stations |
| EDR Hist Cleaner | EDR Exclusive Historical Cleaners |

## EDR RECOVERED GOVERNMENT ARCHIVES

### *Exclusive Recovered Govt. Archives*

| | |
|---|---|
| RGA LF | Recovered Government Archive Solid Waste Facilities List |

# EXECUTIVE SUMMARY

RGA LUST - - - - - - - - - - - - - - - - - - Recovered Government Archive Leaking Underground Storage Tank

**SURROUNDING SITES: SEARCH RESULTS**

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

**STANDARD ENVIRONMENTAL RECORDS**

### *State- and tribal - equivalent CERCLIS*

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 10/29/2018 has revealed that there is 1 ENVIROSTOR site within approximately 1 mile of the target property.

| Lower Elevation | Address | Direction / Distance | Map ID | Page |
|---|---|---|---|---|
| ***CINNAMON DRIVE SCHOO***<br>Facility Id: 16010002<br>Status: No Action Required | ***500 EAST CINNAMON DR*** | ***S 1/2 - 1 (0.871 mi.)*** | ***7*** | ***21*** |

### *State and tribal leaking storage tank lists*

LUST: Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

A review of the LUST list, as provided by EDR, has revealed that there is 1 LUST site within approximately 0.5 miles of the target property.

| Lower Elevation | Address | Direction / Distance | Map ID | Page |
|---|---|---|---|---|
| ***7-ELEVEN #16373***<br>Database: LUST REG 5, Date of Government Version: 07/01/2008<br>Database: LUST, Date of Government Version: 12/10/2018 | ***1110 LEMOORE N*** | ***SSW 1/4 - 1/2 (0.486 mi.)*** | ***6*** | ***13*** |

# EXECUTIVE SUMMARY

Status: Completed - Case Closed
Status: Post remedial action monitoring
Global Id: T0603100159

CPS-SLIC: Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

A review of the CPS-SLIC list, as provided by EDR, has revealed that there is 1 CPS-SLIC site within approximately 0.5 miles of the target property.

| Lower Elevation | Address | Direction / Distance | Map ID | Page |
|---|---|---|---|---|
| ***GATEWAY PLAZA*** | ***1104-1290 NORTH LEMO*** | ***SSW 1/4 - 1/2 (0.406 mi.)*** | ***5*** | ***12*** |

Database: CPS-SLIC, Date of Government Version: 12/10/2018
Facility Status: Open - Site Assessment
Global Id: T10000008442

**ADDITIONAL ENVIRONMENTAL RECORDS**

***Local Lists of Hazardous waste / Contaminated Sites***

CERS HAZ WASTE: List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

A review of the CERS HAZ WASTE list, as provided by EDR, and dated 10/22/2018 has revealed that there is 1 CERS HAZ WASTE site within approximately 0.25 miles of the target property.

| Lower Elevation | Address | Direction / Distance | Map ID | Page |
|---|---|---|---|---|
| ***CITY OF LEMOORE WELL*** | ***LEMOORE AVENUE & GLE*** | ***SW 0 - 1/8 (0.008 mi.)*** | ***1*** | ***8*** |

***Local Lists of Registered Storage Tanks***

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there is 1 HIST UST site within approximately 0.25 miles of the target property.

| Lower Elevation | Address | Direction / Distance | Map ID | Page |
|---|---|---|---|---|
| LEMOORE CEMENTERY | 1441 18 TH AVE | SSW 1/8 - 1/4 (0.170 mi.) | 4 | 12 |

Facility Id: 00000024961

# EXECUTIVE SUMMARY

***Other Ascertainable Records***

CUPA Listings: A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

A review of the CUPA Listings list, as provided by EDR, has revealed that there are 2 CUPA Listings sites within approximately 0.25 miles of the target property.

| Lower Elevation | Address | Direction / Distance | Map ID | Page |
|---|---|---|---|---|
| PEDERSEN FARMS<br>Database: CUPA KINGS, Date of Government Version: 11/21/2018<br>Status: I<br>Facility Id: FA0000648 | 18TH & LACEY BLVD | NW 0 - 1/8 (0.010 mi.) | 2 | 11 |
| MEADOW LANE ELEMENTA<br>Database: CUPA KINGS, Date of Government Version: 11/21/2018<br>Status: A<br>Facility Id: FA0001151 | 252 1/2 MEADOW LN | SSW 0 - 1/8 (0.121 mi.) | 3 | 12 |

HIST CORTESE: The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

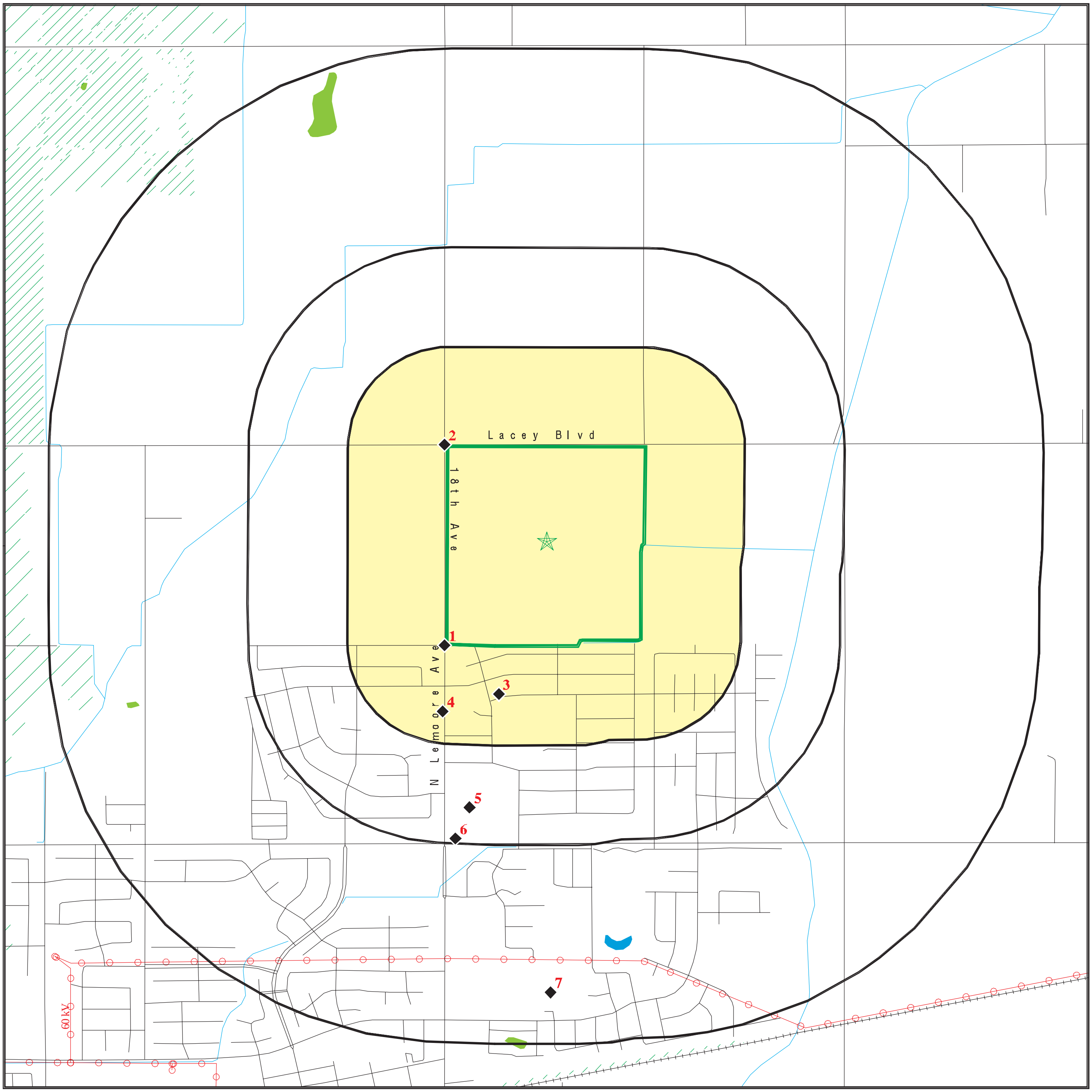
A review of the HIST CORTESE list, as provided by EDR, and dated 04/01/2001 has revealed that there is 1 HIST CORTESE site within approximately 0.5 miles of the target property.

| Lower Elevation | Address | Direction / Distance | Map ID | Page |
|---|---|---|---|---|
| ***7-ELEVEN #16373***<br>Reg Id: 5T16000167 | ***1110 LEMOORE N*** | ***SSW 1/4 - 1/2 (0.486 mi.)*** | ***6*** | ***13*** |

# EXECUTIVE SUMMARY

There were no unmapped sites in this report.

# OVERVIEW MAP - 5566933.2S




Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

| | |
|---|---|
| SITE NAME: Semas Property | CLIENT: Partner Engineering and Science, Inc. |
| ADDRESS: 18th Avenue and West Lacey Boulevard | CONTACT: Colleen Tubridy |
| LEMOORE CA 93245 | INQUIRY #: 5566933.2s |
| LAT/LONG: 36.324438 / 119.77618 | DATE: February 20, 2019 12:11 pm |



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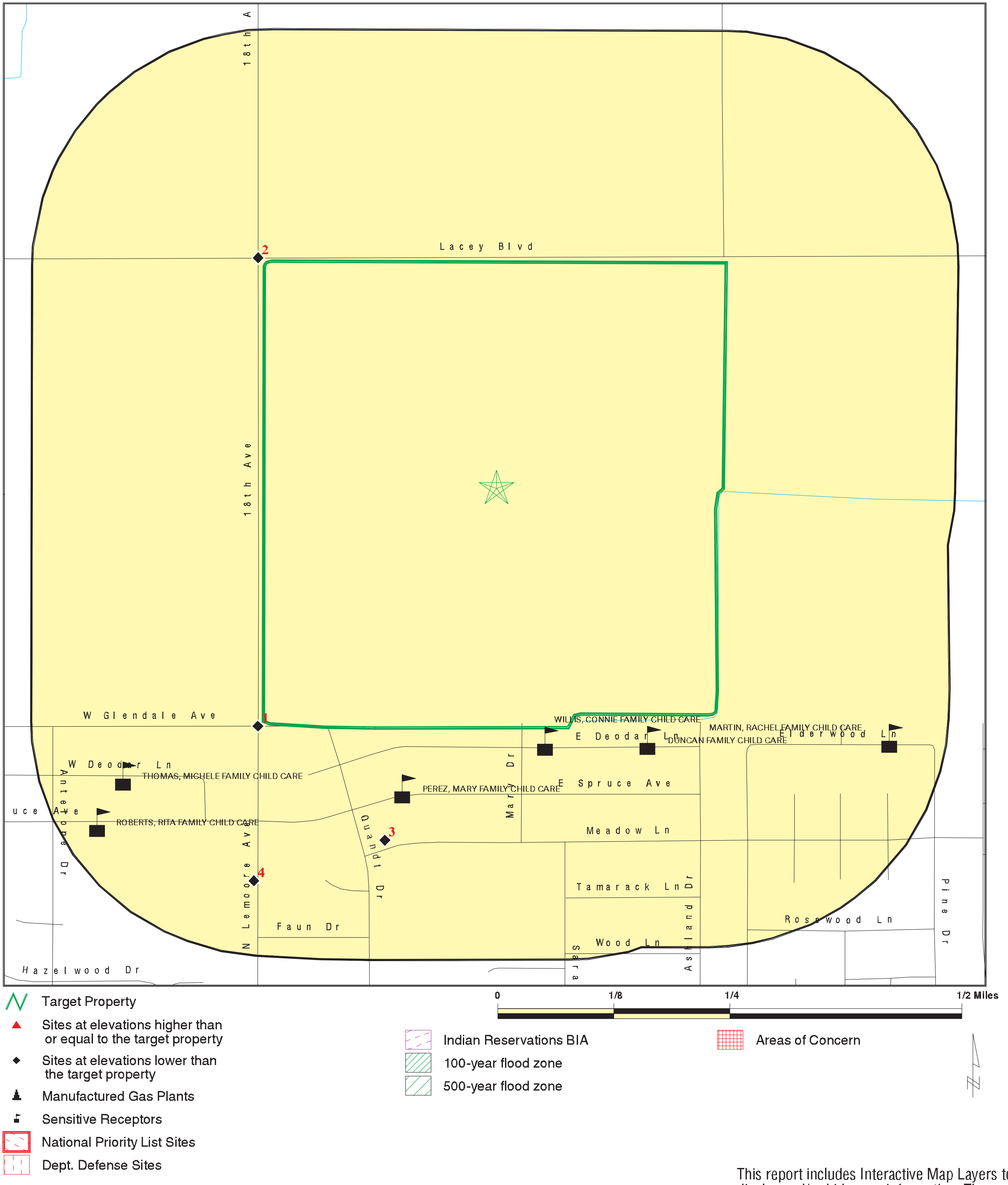
# DETAIL MAP - 5566933.2S




This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

| | |
|---|---|
| SITE NAME: Semas Property | CLIENT: Partner Engineering and Science, Inc. |
| ADDRESS: 18th Avenue and West Lacey Boulevard | CONTACT: Colleen Tubridy |
| LEMOORE CA 93245 | INQUIRY #: 5566933.2s |
| LAT/LONG: 36.324438 / 119.77618 | DATE: February 20, 2019 12:14 pm |



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## MAP FINDINGS SUMMARY

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| **STANDARD ENVIRONMENTAL RECORDS** | | | | | | | | |
| ***Federal NPL site list*** | | | | | | | | |
| NPL | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| Proposed NPL | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| NPL LIENS | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| ***Federal Delisted NPL site list*** | | | | | | | | |
| Delisted NPL | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| ***Federal CERCLIS list*** | | | | | | | | |
| FEDERAL FACILITY | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| SEMS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Federal CERCLIS NFRAP site list*** | | | | | | | | |
| SEMS-ARCHIVE | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Federal RCRA CORRACTS facilities list*** | | | | | | | | |
| CORRACTS | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| ***Federal RCRA non-CORRACTS TSD facilities list*** | | | | | | | | |
| RCRA-TSDF | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Federal RCRA generators list*** | | | | | | | | |
| RCRA-LQG | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| RCRA-SQG | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| RCRA-CESQG | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| ***Federal institutional controls / engineering controls registries*** | | | | | | | | |
| LUCIS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| US ENG CONTROLS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| US INST CONTROL | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Federal ERNS list*** | | | | | | | | |
| ERNS | TP | | NR | NR | NR | NR | NR | 0 |
| ***State- and tribal - equivalent NPL*** | | | | | | | | |
| RESPONSE | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| ***State- and tribal - equivalent CERCLIS*** | | | | | | | | |
| ENVIROSTOR | 1.000 | | 0 | 0 | 0 | 1 | NR | 1 |
| ***State and tribal landfill and/or solid waste disposal site lists*** | | | | | | | | |
| SWF/LF | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***State and tribal leaking storage tank lists*** | | | | | | | | |
| LUST | 0.500 | | 0 | 0 | 1 | NR | NR | 1 |

# MAP FINDINGS SUMMARY

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| INDIAN LUST | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| CPS-SLIC | 0.500 | | 0 | 0 | 1 | NR | NR | 1 |
| ***State and tribal registered storage tank lists*** | | | | | | | | |
| FEMA UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| AST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| INDIAN UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| ***State and tribal voluntary cleanup sites*** | | | | | | | | |
| VCP | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| INDIAN VCP | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***State and tribal Brownfields sites*** | | | | | | | | |
| BROWNFIELDS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |

**ADDITIONAL ENVIRONMENTAL RECORDS**

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| ***Local Brownfield lists*** | | | | | | | | |
| US BROWNFIELDS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Local Lists of Landfill / Solid Waste Disposal Sites*** | | | | | | | | |
| WMUDS/SWAT | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| SWRCY | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| HAULERS | TP | | NR | NR | NR | NR | NR | 0 |
| INDIAN ODI | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ODI | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| DEBRIS REGION 9 | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| IHS OPEN DUMPS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Local Lists of Hazardous waste / Contaminated Sites*** | | | | | | | | |
| US HIST CDL | TP | | NR | NR | NR | NR | NR | 0 |
| HIST Cal-Sites | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| SCH | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| CDL | TP | | NR | NR | NR | NR | NR | 0 |
| Toxic Pits | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| CERS HAZ WASTE | 0.250 | | 1 | 0 | NR | NR | NR | 1 |
| US CDL | TP | | NR | NR | NR | NR | NR | 0 |
| ***Local Lists of Registered Storage Tanks*** | | | | | | | | |
| SWEEPS UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| HIST UST | 0.250 | | 0 | 1 | NR | NR | NR | 1 |
| CERS TANKS | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| CA FID UST | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| ***Local Land Records*** | | | | | | | | |
| LIENS | TP | | NR | NR | NR | NR | NR | 0 |
| LIENS 2 | TP | | NR | NR | NR | NR | NR | 0 |

# MAP FINDINGS SUMMARY

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| DEED | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| ***Records of Emergency Release Reports*** | | | | | | | | |
| HMIRS | TP | | NR | NR | NR | NR | NR | 0 |
| CHMIRS | TP | | NR | NR | NR | NR | NR | 0 |
| LDS | TP | | NR | NR | NR | NR | NR | 0 |
| MCS | TP | | NR | NR | NR | NR | NR | 0 |
| SPILLS 90 | TP | | NR | NR | NR | NR | NR | 0 |
| ***Other Ascertainable Records*** | | | | | | | | |
| RCRA NonGen / NLR | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| FUDS | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| DOD | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| SCRD DRYCLEANERS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| US FIN ASSUR | TP | | NR | NR | NR | NR | NR | 0 |
| EPA WATCH LIST | TP | | NR | NR | NR | NR | NR | 0 |
| 2020 COR ACTION | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| TSCA | TP | | NR | NR | NR | NR | NR | 0 |
| TRIS | TP | | NR | NR | NR | NR | NR | 0 |
| SSTS | TP | | NR | NR | NR | NR | NR | 0 |
| ROD | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| RMP | TP | | NR | NR | NR | NR | NR | 0 |
| RAATS | TP | | NR | NR | NR | NR | NR | 0 |
| PRP | TP | | NR | NR | NR | NR | NR | 0 |
| PADS | TP | | NR | NR | NR | NR | NR | 0 |
| ICIS | TP | | NR | NR | NR | NR | NR | 0 |
| FTTS | TP | | NR | NR | NR | NR | NR | 0 |
| MLTS | TP | | NR | NR | NR | NR | NR | 0 |
| COAL ASH DOE | TP | | NR | NR | NR | NR | NR | 0 |
| COAL ASH EPA | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| PCB TRANSFORMER | TP | | NR | NR | NR | NR | NR | 0 |
| RADINFO | TP | | NR | NR | NR | NR | NR | 0 |
| HIST FTTS | TP | | NR | NR | NR | NR | NR | 0 |
| DOT OPS | TP | | NR | NR | NR | NR | NR | 0 |
| CONSENT | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| INDIAN RESERV | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| FUSRAP | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| UMTRA | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| LEAD SMELTERS | TP | | NR | NR | NR | NR | NR | 0 |
| US AIRS | TP | | NR | NR | NR | NR | NR | 0 |
| US MINES | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| ABANDONED MINES | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| FINDS | TP | | NR | NR | NR | NR | NR | 0 |
| ECHO | TP | | NR | NR | NR | NR | NR | 0 |
| DOCKET HWC | TP | | NR | NR | NR | NR | NR | 0 |
| UXO | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| FUELS PROGRAM | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| CA BOND EXP. PLAN | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| Cortese | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| CUPA Listings | 0.250 | | 2 | 0 | NR | NR | NR | 2 |
| DRYCLEANERS | 0.250 | | 0 | 0 | NR | NR | NR | 0 |

# MAP FINDINGS SUMMARY

| Database | Search Distance (Miles) | Target Property | < 1/8 | 1/8 - 1/4 | 1/4 - 1/2 | 1/2 - 1 | > 1 | Total Plotted |
|---|---|---|---|---|---|---|---|---|
| EMI | TP | | NR | NR | NR | NR | NR | 0 |
| ENF | TP | | NR | NR | NR | NR | NR | 0 |
| Financial Assurance | TP | | NR | NR | NR | NR | NR | 0 |
| HAZNET | TP | | NR | NR | NR | NR | NR | 0 |
| ICE | TP | | NR | NR | NR | NR | NR | 0 |
| HIST CORTESE | 0.500 | | 0 | 0 | 1 | NR | NR | 1 |
| HWP | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| HWT | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| MINES | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| MWMP | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| NPDES | TP | | NR | NR | NR | NR | NR | 0 |
| PEST LIC | TP | | NR | NR | NR | NR | NR | 0 |
| PROC | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| Notify 65 | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| UIC | TP | | NR | NR | NR | NR | NR | 0 |
| UIC GEO | TP | | NR | NR | NR | NR | NR | 0 |
| WASTEWATER PITS | 0.500 | | 0 | 0 | 0 | NR | NR | 0 |
| WDS | TP | | NR | NR | NR | NR | NR | 0 |
| MILITARY PRIV SITES | TP | | NR | NR | NR | NR | NR | 0 |
| PROJECT | TP | | NR | NR | NR | NR | NR | 0 |
| WDR | TP | | NR | NR | NR | NR | NR | 0 |
| CIWQS | TP | | NR | NR | NR | NR | NR | 0 |
| CERS | TP | | NR | NR | NR | NR | NR | 0 |
| WIP | 0.250 | | 0 | 0 | NR | NR | NR | 0 |
| NON-CASE INFO | TP | | NR | NR | NR | NR | NR | 0 |
| OTHER OIL GAS | TP | | NR | NR | NR | NR | NR | 0 |
| PROD WATER PONDS | TP | | NR | NR | NR | NR | NR | 0 |
| SAMPLING POINT | TP | | NR | NR | NR | NR | NR | 0 |
| WELL STIM PROJ | TP | | NR | NR | NR | NR | NR | 0 |
| **EDR HIGH RISK HISTORICAL RECORDS** | | | | | | | | |
| ***EDR Exclusive Records*** | | | | | | | | |
| EDR MGP | 1.000 | | 0 | 0 | 0 | 0 | NR | 0 |
| EDR Hist Auto | 0.125 | | 0 | NR | NR | NR | NR | 0 |
| EDR Hist Cleaner | 0.125 | | 0 | NR | NR | NR | NR | 0 |
| **EDR RECOVERED GOVERNMENT ARCHIVES** | | | | | | | | |
| ***Exclusive Recovered Govt. Archives*** | | | | | | | | |
| RGA LF | TP | | NR | NR | NR | NR | NR | 0 |
| RGA LUST | TP | | NR | NR | NR | NR | NR | 0 |
| - Totals -- | | 0 | 3 | 1 | 3 | 1 | 0 | 8 |

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

| | | | |
|---|---|---|---|
| **1**<br>**SW**<br>**< 1/8**<br>**0.008 mi.**<br>**41 ft.** | **CITY OF LEMOORE WELL 11# SODIUM HYPOCHLORITE FACIL**<br>**LEMOORE AVENUE & GLENDALE AVE**<br>**LEMOORE, CA 93245** | **CERS HAZ WASTE**<br>**CERS** | **S121751322**<br>**N/A** |

**Relative:** **Lower**

**Actual:** **233 ft.**

CERS HAZ WASTE:

| | |
|---|---|
| Site ID: | 19721 |
| CERS ID: | 10446568 |
| CERS Description: | Hazardous Chemical Management |

Affiliation:

| | |
|---|---|
| Affiliation Type Desc: | CUPA District |
| Entity Name: | Kings County Env Health |
| Entity Title: | Not reported |
| Affiliation Address: | 330 Campus Drive |
| Affiliation City: | Hanford |
| Affiliation State: | CA |
| Affiliation Country: | Not reported |
| Affiliation Zip: | 93230 |
| Affiliation Phone: | (559) 584-1411 |

| | |
|---|---|
| Affiliation Type Desc: | Document Preparer |
| Entity Name: | Richard Pereira |
| Entity Title: | Not reported |
| Affiliation Address: | Not reported |
| Affiliation City: | Not reported |
| Affiliation State: | Not reported |
| Affiliation Country: | Not reported |
| Affiliation Zip: | Not reported |
| Affiliation Phone: | Not reported |

| | |
|---|---|
| Affiliation Type Desc: | Identification Signer |
| Entity Name: | Richard Pereira |
| Entity Title: | Public Works Superintendent |
| Affiliation Address: | Not reported |
| Affiliation City: | Not reported |
| Affiliation State: | Not reported |
| Affiliation Country: | Not reported |
| Affiliation Zip: | Not reported |
| Affiliation Phone: | Not reported |

| | |
|---|---|
| Affiliation Type Desc: | Legal Owner |
| Entity Name: | City of Lemoore |
| Entity Title: | Not reported |
| Affiliation Address: | 711 Cinnamon Dr. |
| Affiliation City: | Lemoore |
| Affiliation State: | CA |
| Affiliation Country: | United States |
| Affiliation Zip: | 93245 |
| Affiliation Phone: | (559) 924-6744 |

| | |
|---|---|
| Affiliation Type Desc: | Operator |
| Entity Name: | City of Lemoore |
| Entity Title: | Not reported |
| Affiliation Address: | Not reported |
| Affiliation City: | Not reported |
| Affiliation State: | Not reported |
| Affiliation Country: | Not reported |
| Affiliation Zip: | Not reported |

**CITY OF LEMOORE WELL 11# SODIUM HYPOCHLORITE FACILITY (Continued)** **S121751322**

Affiliation Phone: (559) 924-6744

Affiliation Type Desc: Parent Corporation
Entity Name: City of Lemoore
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Property Owner
Entity Name: City of Lemoore
Entity Title: Not reported
Affiliation Address: 711 Cinnamon Dr.
Affiliation City: Lemoore
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 93245
Affiliation Phone: (559) 924-6744

Affiliation Type Desc: Facility Mailing Address
Entity Name: Mailing Address
Entity Title: Not reported
Affiliation Address: 711 Cinnamon Dr.
Affiliation City: Lemoore
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 93245
Affiliation Phone: Not reported

Affiliation Type Desc: Environmental Contact
Entity Name: Richard Pereira
Entity Title: Not reported
Affiliation Address: 711 Cinnamon Dr.
Affiliation City: Lemoore
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 93245
Affiliation Phone: (559) 924-6744

CERS TANKS:
Site ID: 19721
CERS ID: 10446568
CERS Description: Chemical Storage Facilities

Affiliation:
Affiliation Type Desc: CUPA District
Entity Name: Kings County Env Health
Entity Title: Not reported
Affiliation Address: 330 Campus Drive
Affiliation City: Hanford
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: 93230

**CITY OF LEMOORE WELL 11# SODIUM HYPOCHLORITE FACILITY (Continued)** **S121751322**

Affiliation Phone: (559) 584-1411

Affiliation Type Desc: Document Preparer
Entity Name: Richard Pereira
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Identification Signer
Entity Name: Richard Pereira
Entity Title: Public Works Superintendent
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Legal Owner
Entity Name: City of Lemoore
Entity Title: Not reported
Affiliation Address: 711 Cinnamon Dr.
Affiliation City: Lemoore
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 93245
Affiliation Phone: (559) 924-6744

Affiliation Type Desc: Operator
Entity Name: City of Lemoore
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: (559) 924-6744

Affiliation Type Desc: Parent Corporation
Entity Name: City of Lemoore
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Property Owner
Entity Name: City of Lemoore
Entity Title: Not reported
Affiliation Address: 711 Cinnamon Dr.
Affiliation City: Lemoore

**CITY OF LEMOORE WELL 11# SODIUM HYPOCHLORITE FACILITY (Continued)** **S121751322**

| | |
|---|---|
| Affiliation State: | CA |
| Affiliation Country: | United States |
| Affiliation Zip: | 93245 |
| Affiliation Phone: | (559) 924-6744 |
| | |
| Affiliation Type Desc: | Facility Mailing Address |
| Entity Name: | Mailing Address |
| Entity Title: | Not reported |
| Affiliation Address: | 711 Cinnamon Dr. |
| Affiliation City: | Lemoore |
| Affiliation State: | CA |
| Affiliation Country: | Not reported |
| Affiliation Zip: | 93245 |
| Affiliation Phone: | Not reported |
| | |
| Affiliation Type Desc: | Environmental Contact |
| Entity Name: | Richard Pereira |
| Entity Title: | Not reported |
| Affiliation Address: | 711 Cinnamon Dr. |
| Affiliation City: | Lemoore |
| Affiliation State: | CA |
| Affiliation Country: | Not reported |
| Affiliation Zip: | 93245 |
| Affiliation Phone: | (559) 924-6744 |

---

**2** **PEDERSEN FARMS** **CUPA Listings** **S118469380**
**NW** **18TH & LACEY BLVD** **N/A**
**< 1/8** **LEMOORE, CA 93245**
**0.010 mi.**
**54 ft.**

**Relative:**
**Lower**

**Actual:**
**232 ft.**

CUPA KINGS:

| | |
|---|---|
| Region: | KING |
| Facility Id: | FA0000648 |
| Status: | I |
| PE: | 2212 |
| Mailing Address 1: | 12285 16TH AVE |
| Mailing State: | CA |
| Mailing Zip: | 93245 |
| Decode of Fstatus: | InActive |
| Mailing Name: | CRAIG,KRIS & MARDELL PEDERSEN |
| | |
| Region: | KING |
| Facility Id: | FA0000648 |
| Status: | I |
| PE: | 2229 |
| Mailing Address 1: | 12285 16TH AVE |
| Mailing State: | CA |
| Mailing Zip: | Not reported |
| Decode of Fstatus: | InActive |
| Mailing Name: | CRAIG,KRIS & MARDELL PEDERSEN |

**3** **MEADOW LANE ELEMENTARY** **CUPA Listings** **S122338935**
**SSW** **252 1/2 MEADOW LN** **N/A**
**< 1/8** **LEMOORE, CA 93245**
**0.121 mi.**
**638 ft.**

**Relative:** **Lower**
**Actual:** **233 ft.**

CUPA KINGS:

| | |
|---|---|
| Region: | KING |
| Facility Id: | FA0001151 |
| Status: | A |
| PE: | 1623 |
| Mailing Address 1: | 100 VINE ST |
| Mailing State: | CA |
| Mailing Zip: | 93245 |
| Decode of Fstatus: | Active |
| Mailing Name: | RENEE DYKSTRA |

---

**4** **LEMOORE CEMENTERY** **HIST UST** **U001581932**
**SSW** **1441 18 TH AVE** **N/A**
**1/8-1/4** **LEMOORE, CA 93245**
**0.170 mi.**
**896 ft.**

**Relative:** **Lower**
**Actual:** **232 ft.**

HIST UST:

| | |
|---|---|
| File Number: | 00025661 |
| URL: | http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00025661.pdf |
| Region: | STATE |
| Facility ID: | 00000024961 |
| Facility Type: | Other |
| Other Type: | CEMETERY OPERATION |
| Contact Name: | K.L. DUDLEY |
| Telephone: | 2099243439 |
| Owner Name: | LEMOORE CEMETERY DISTRICT |
| Owner Address: | 1441 18TH. AVE. |
| Owner City,St,Zip: | LEMOORE, CA 93245 |
| Total Tanks: | 0001 |

| | |
|---|---|
| Tank Num: | 001 |
| Container Num: | 1 |
| Year Installed: | Not reported |
| Tank Capacity: | 00000550 |
| Tank Used for: | PRODUCT |
| Type of Fuel: | REGULAR |
| Container Construction Thickness: | Not reported |
| Leak Detection: | None |

Click here for Geo Tracker PDF:

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**5** **GATEWAY PLAZA** **CPS-SLIC** **S118504787**
**SSW** **1104-1290 NORTH LEMOORE AVENUE** **CERS** **N/A**
**1/4-1/2** **LEMOORE, CA 93245**
**0.406 mi.**
**2145 ft.**

**Relative:** **Lower**
**Actual:** **233 ft.**

CPS-SLIC:

| | |
|---|---|
| Region: | STATE |
| **Facility Status:** | **Open - Site Assessment** |
| Status Date: | 02/05/2016 |

**GATEWAY PLAZA (Continued)** **S118504787**

| | |
|---|---|
| Global Id: | T10000008442 |
| Lead Agency: | CENTRAL VALLEY RWQCB (REGION 5F) |
| Lead Agency Case Number: | Not reported |
| Latitude: | 36.31578 |
| Longitude: | -119.78046 |
| Case Type: | Cleanup Program Site |
| Case Worker: | GJI |
| Local Agency: | Not reported |
| RB Case Number: | T10000008442 |
| File Location: | Regional Board |
| Potential Media Affected: | Aquifer used for drinking water supply, Soil |
| Potential Contaminants of Concern: | Dichloroethene (DCE) |
| Site History: | Two dry cleaning tenants historically occupied the subject property, Fashion Cleaners and B&D Cleaners. As a result of past operations and practices, underlying soil and groundwater have been impacted by PCE. Staff has placed the facility in the Cost Recovery Program this year and has initiated oversight of the project to fully assess the extent of contamination in groundwater and potential remediation alternatives. |

Click here to access the California GeoTracker records for this facility:

CERS TANKS:

| | |
|---|---|
| Site ID: | 364004 |
| CERS ID: | T10000008442 |
| CERS Description: | Cleanup Program Site |

Affiliation:

| | |
|---|---|
| Affiliation Type Desc: | Regional Board Caseworker |
| Entity Name: | GREG ISSINGHOFF - CENTRAL VALLEY RWQCB (REGION 5F) |
| Entity Title: | Not reported |
| Affiliation Address: | 1685 E STREET |
| Affiliation City: | FRESNO |
| Affiliation State: | CA |
| Affiliation Country: | Not reported |
| Affiliation Zip: | Not reported |
| Affiliation Phone: | 5594884390 |

---

| | | | |
|---|---|---|---|
| **6** | **7-ELEVEN #16373** | **LUST** | **S104404440** |
| **SSW** | **1110 LEMOORE N** | **HIST CORTESE** | **N/A** |
| **1/4-1/2** | **LEMOORE, CA 93245** | **CERS** | |
| **0.486 mi.** | | | |
| **2567 ft.** | | | |

**Relative:**
**Lower**

**Actual:**
**233 ft.**

LUST:

| | |
|---|---|
| Lead Agency: | CENTRAL VALLEY RWQCB (REGION 5F) |
| Case Type: | LUST Cleanup Site |
| Geo Track: | http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0603100159 |
| Global Id: | T0603100159 |
| Latitude: | 36.3133562 |
| Longitude: | -119.7808115 |
| Status: | Completed - Case Closed |
| Status Date: | 12/02/2009 |
| Case Worker: | JDW |
| RB Case Number: | 5T16000167 |
| Local Agency: | KINGS COUNTY |
| File Location: | Regional Board |

**7-ELEVEN #16373 (Continued)** **S104404440**

Local Case Number: Not reported
Potential Media Affect: Aquifer used for drinking water supply
Potential Contaminants of Concern: Gasoline
Site History: Not reported

LUST:
Global Id: T0603100159
Contact Type: Regional Board Caseworker
Contact Name: JOHN WHITING
Organization Name: CENTRAL VALLEY RWQCB (REGION 5F)
Address: 1685 E STREET
City: FRESNO
Email: john.whiting@waterboards.ca.gov
Phone Number: Not reported

Global Id: T0603100159
Contact Type: Local Agency Caseworker
Contact Name: RAYMOND COOKE
Organization Name: KINGS COUNTY
Address: Not reported
City: r5 UNKNOWN
Email: Not reported
Phone Number: Not reported

LUST:
Global Id: T0603100159
Action Type: Other
Date: 09/10/1997
Action: Leak Reported

Global Id: T0603100159
Action Type: RESPONSE
Date: 02/02/2005
Action: Other Workplan

Global Id: T0603100159
Action Type: RESPONSE
Date: 03/07/2006
Action: CAP/RAP - Feasibility Study Report

Global Id: T0603100159
Action Type: RESPONSE
Date: 09/29/2005
Action: Other Report / Document

Global Id: T0603100159
Action Type: RESPONSE
Date: 11/02/2005
Action: Monitoring Report - Quarterly

Global Id: T0603100159
Action Type: RESPONSE
Date: 09/29/2005
Action: Other Report / Document

Global Id: T0603100159
Action Type: RESPONSE

**7-ELEVEN #16373 (Continued)** **S104404440**

| | |
|---|---|
| Date: | 03/07/2006 |
| Action: | CAP/RAP - Feasibility Study Report |
| | |
| Global Id: | T0603100159 |
| Action Type: | RESPONSE |
| Date: | 02/02/2005 |
| Action: | Monitoring Report - Quarterly |
| | |
| Global Id: | T0603100159 |
| Action Type: | RESPONSE |
| Date: | 08/02/2006 |
| Action: | Monitoring Report - Quarterly |
| | |
| Global Id: | T0603100159 |
| Action Type: | ENFORCEMENT |
| Date: | 03/16/2005 |
| Action: | * Verbal Communication |
| | |
| Global Id: | T0603100159 |
| Action Type: | ENFORCEMENT |
| Date: | 03/29/2004 |
| Action: | Staff Letter |
| | |
| Global Id: | T0603100159 |
| Action Type: | ENFORCEMENT |
| Date: | 01/13/2004 |
| Action: | Site Visit / Inspection / Sampling |
| | |
| Global Id: | T0603100159 |
| Action Type: | ENFORCEMENT |
| Date: | 10/23/2008 |
| Action: | Staff Letter |
| | |
| Global Id: | T0603100159 |
| Action Type: | RESPONSE |
| Date: | 05/02/2006 |
| Action: | Monitoring Report - Quarterly |
| | |
| Global Id: | T0603100159 |
| Action Type: | RESPONSE |
| Date: | 05/02/2007 |
| Action: | Monitoring Report - Quarterly |
| | |
| Global Id: | T0603100159 |
| Action Type: | RESPONSE |
| Date: | 08/02/2007 |
| Action: | Monitoring Report - Quarterly |
| | |
| Global Id: | T0603100159 |
| Action Type: | ENFORCEMENT |
| Date: | 01/16/2004 |
| Action: | * Verbal Communication |
| | |
| Global Id: | T0603100159 |
| Action Type: | ENFORCEMENT |
| Date: | 05/05/2009 |
| Action: | Staff Letter |

**7-ELEVEN #16373 (Continued)** **S104404440**

Global Id: T0603100159
Action Type: ENFORCEMENT
Date: 02/26/2009
Action: Notification - Public Notice of Case Closure

Global Id: T0603100159
Action Type: ENFORCEMENT
Date: 07/31/2009
Action: Staff Letter

Global Id: T0603100159
Action Type: RESPONSE
Date: 12/23/2008
Action: Other Report / Document

Global Id: T0603100159
Action Type: RESPONSE
Date: 02/04/2008
Action: Monitoring Report - Quarterly

Global Id: T0603100159
Action Type: RESPONSE
Date: 05/05/2008
Action: Monitoring Report - Quarterly

Global Id: T0603100159
Action Type: RESPONSE
Date: 04/28/2008
Action: Other Workplan

Global Id: T0603100159
Action Type: ENFORCEMENT
Date: 07/27/2005
Action: Staff Letter

Global Id: T0603100159
Action Type: ENFORCEMENT
Date: 08/17/2005
Action: * Verbal Communication

Global Id: T0603100159
Action Type: ENFORCEMENT
Date: 08/29/2005
Action: Staff Letter

Global Id: T0603100159
Action Type: ENFORCEMENT
Date: 09/01/2004
Action: Staff Letter

Global Id: T0603100159
Action Type: ENFORCEMENT
Date: 10/29/2009
Action: Staff Letter

Global Id: T0603100159
Action Type: ENFORCEMENT

**7-ELEVEN #16373 (Continued)** **S104404440**

Date: 12/02/2009
Action: Closure/No Further Action Letter

Global Id: T0603100159
Action Type: RESPONSE
Date: 09/22/2005
Action: Other Workplan

Global Id: T0603100159
Action Type: ENFORCEMENT
Date: 05/10/2005
Action: Site Visit / Inspection / Sampling

Global Id: T0603100159
Action Type: ENFORCEMENT
Date: 03/23/2005
Action: Staff Letter

Global Id: T0603100159
Action Type: ENFORCEMENT
Date: 10/18/2005
Action: Staff Letter

Global Id: T0603100159
Action Type: ENFORCEMENT
Date: 07/06/2005
Action: Site Visit / Inspection / Sampling

Global Id: T0603100159
Action Type: RESPONSE
Date: 11/13/2009
Action: Well Destruction Report

Global Id: T0603100159
Action Type: ENFORCEMENT
Date: 06/11/2003
Action: Staff Letter

Global Id: T0603100159
Action Type: ENFORCEMENT
Date: 05/27/2003
Action: * Verbal Communication

Global Id: T0603100159
Action Type: ENFORCEMENT
Date: 03/14/2005
Action: Staff Letter

Global Id: T0603100159
Action Type: RESPONSE
Date: 06/24/2004
Action: Other Report / Document

Global Id: T0603100159
Action Type: RESPONSE
Date: 06/19/2004
Action: Other Report / Document

**7-ELEVEN #16373 (Continued)** **S104404440**

| | |
|---|---|
| Global Id: | T0603100159 |
| Action Type: | RESPONSE |
| Date: | 11/14/2003 |
| Action: | Corrective Action Plan / Remedial Action Plan |
| | |
| Global Id: | T0603100159 |
| Action Type: | RESPONSE |
| Date: | 11/03/2003 |
| Action: | Monitoring Report - Quarterly |
| | |
| Global Id: | T0603100159 |
| Action Type: | RESPONSE |
| Date: | 04/01/2004 |
| Action: | Other Report / Document |
| | |
| Global Id: | T0603100159 |
| Action Type: | RESPONSE |
| Date: | 04/01/2004 |
| Action: | Well Installation Report |
| | |
| Global Id: | T0603100159 |
| Action Type: | RESPONSE |
| Date: | 02/02/2004 |
| Action: | Monitoring Report - Quarterly |
| | |
| Global Id: | T0603100159 |
| Action Type: | ENFORCEMENT |
| Date: | 04/17/2006 |
| Action: | Staff Letter |
| | |
| Global Id: | T0603100159 |
| Action Type: | ENFORCEMENT |
| Date: | 10/17/2006 |
| Action: | Site Visit / Inspection / Sampling |
| | |
| Global Id: | T0603100159 |
| Action Type: | ENFORCEMENT |
| Date: | 02/21/2007 |
| Action: | Staff Letter |
| | |
| Global Id: | T0603100159 |
| Action Type: | RESPONSE |
| Date: | 11/15/2003 |
| Action: | Corrective Action Plan / Remedial Action Plan |
| | |
| Global Id: | T0603100159 |
| Action Type: | RESPONSE |
| Date: | 08/04/2003 |
| Action: | Monitoring Report - Quarterly |
| | |
| Global Id: | T0603100159 |
| Action Type: | RESPONSE |
| Date: | 11/04/2003 |
| Action: | Monitoring Report - Quarterly |
| | |
| Global Id: | T0603100159 |
| Action Type: | ENFORCEMENT |

**7-ELEVEN #16373 (Continued)** **S104404440**

Date: 12/08/2003
Action: Staff Letter

Global Id: T0603100159
Action Type: ENFORCEMENT
Date: 03/23/2004
Action: Staff Letter

Global Id: T0603100159
Action Type: ENFORCEMENT
Date: 03/08/2004
Action: Staff Letter

Global Id: T0603100159
Action Type: Other
Date: 09/08/1997
Action: Leak Discovery

Global Id: T0603100159
Action Type: RESPONSE
Date: 08/02/2005
Action: Well Installation Report

Global Id: T0603100159
Action Type: RESPONSE
Date: 08/02/2005
Action: Monitoring Report - Quarterly

Global Id: T0603100159
Action Type: ENFORCEMENT
Date: 06/25/2003
Action: Staff Letter

Global Id: T0603100159
Action Type: ENFORCEMENT
Date: 01/10/2008
Action: Staff Letter

Global Id: T0603100159
Action Type: ENFORCEMENT
Date: 12/17/2007
Action: Technical Correspondence / Assistance / Other

Global Id: T0603100159
Action Type: ENFORCEMENT
Date: 06/18/2003
Action: * Verbal Communication

Global Id: T0603100159
Action Type: Other
Date: 09/15/1997
Action: Leak Stopped

Global Id: T0603100159
Action Type: RESPONSE
Date: 05/02/2005
Action: Monitoring Report - Quarterly

**7-ELEVEN #16373 (Continued)** **S104404440**

Global Id: T0603100159
Action Type: RESPONSE
Date: 06/27/2005
Action: Interim Remedial Action Plan

Global Id: T0603100159
Action Type: ENFORCEMENT
Date: 10/06/2003
Action: Staff Letter

Global Id: T0603100159
Action Type: ENFORCEMENT
Date: 11/17/2005
Action: Staff Letter

Global Id: T0603100159
Action Type: ENFORCEMENT
Date: 09/15/2003
Action: Site Visit / Inspection / Sampling

Global Id: T0603100159
Action Type: ENFORCEMENT
Date: 03/09/2004
Action: * Verbal Communication

LUST:

Global Id: T0603100159
Status: Completed - Case Closed
Status Date: 12/02/2009

Global Id: T0603100159
Status: Open - Case Begin Date
Status Date: 09/08/1997

Global Id: T0603100159
Status: Open - Remediation
Status Date: 01/13/2000

Global Id: T0603100159
Status: Open - Remediation
Status Date: 04/23/2001

Global Id: T0603100159
Status: Open - Remediation
Status Date: 11/12/2003

Global Id: T0603100159
Status: Open - Verification Monitoring
Status Date: 11/02/2005

LUST REG 5:

Region: 5
Status: Post remedial action monitoring
Case Number: 5T16000167
Case Type: Drinking Water Aquifer affected

**7-ELEVEN #16373 (Continued)** **S104404440**

Substance: GASOLINE
Staff Initials: JDW
Lead Agency: Regional
Program: LUST
MTBE Code: 8

HIST CORTESE:
Region: CORTESE
Facility County Code: 16
Reg By: LTNKA
Reg Id: 5T16000167

CERS TANKS:
Site ID: 212760
CERS ID: T0603100159
CERS Description: Leaking Underground Storage Tank Cleanup Site

Affiliation:
Affiliation Type Desc: Regional Board Caseworker
Entity Name: JOHN WHITING - CENTRAL VALLEY RWQCB (REGION 5F)
Entity Title: Not reported
Affiliation Address: 1685 E STREET
Affiliation City: FRESNO
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Affiliation Type Desc: Local Agency Caseworker
Entity Name: RAYMOND COOKE - KINGS COUNTY
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: r5 UNKNOWN
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

---

| Map ID / Direction / Distance / Elevation | Site | Database(s) | EDR ID Number / EPA ID Number |
|---|---|---|---|
| **7**<br>**South**<br>**1/2-1**<br>**0.871 mi.**<br>**4599 ft.** | **CINNAMON DRIVE SCHOOL SITE**<br>**500 EAST CINNAMON DRIVE**<br>**LEMOORE, CA 93245** | **ENVIROSTOR**<br>**SCH**<br>**CUPA Listings** | **S118756487**<br>**N/A** |

**Relative:** **Lower**

**Actual:** **232 ft.**

ENVIROSTOR:
Facility ID: 16010002
Status: No Action Required
Status Date: 08/18/1999
Site Code: 101173
Site Type: School Investigation
Site Type Detailed: School
Acres: 10.39
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Not reported

**CINNAMON DRIVE SCHOOL SITE (Continued)** **S118756487**

Supervisor: Mark Malinowski
Division Branch: Northern California Schools & Santa Susana
Assembly: 32
Senate: 14
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: School District
Latitude: 36.3075
Longitude: -119.7755
APN: NONE SPECIFIED
Past Use: AGRICULTURAL - ROW CROPS
Potential COC: NONE SPECIFIED No Contaminants found
Confirmed COC: NONE SPECIFIED
Potential Description: NMA
Alias Name: CINNAMON DRIVE SCHOOL SITE
Alias Type: Alternate Name
Alias Name: LEMOORE UNION ELEM. SCH. DIST. CINNAMON
Alias Type: Alternate Name
Alias Name: LEMOORE UNION ELEMENTARY SCHOOL DISTRICT
Alias Type: Alternate Name
Alias Name: 101173
Alias Type: Project Code (Site Code)
Alias Name: 16010002
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 08/18/1999
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 08/10/1999
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 09/07/1999
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

SCH:

**CINNAMON DRIVE SCHOOL SITE (Continued)** **S118756487**

| | |
|---|---|
| Facility ID: | 16010002 |
| Site Type: | School Investigation |
| Site Type Detail: | School |
| Site Mgmt. Req.: | NONE SPECIFIED |
| Acres: | 10.39 |
| National Priorities List: | NO |
| Cleanup Oversight Agencies: | SMBRP |
| Lead Agency: | SMBRP |
| Lead Agency Description: | DTSC - Site Cleanup Program |
| Project Manager: | Not reported |
| Supervisor: | Mark Malinowski |
| Division Branch: | Northern California Schools & Santa Susana |
| Site Code: | 101173 |
| Assembly: | 32 |
| Senate: | 14 |
| Special Program Status: | Not reported |
| Status: | No Action Required |
| Status Date: | 08/18/1999 |
| Restricted Use: | NO |
| Funding: | School District |
| Latitude: | 36.3075 |
| Longitude: | -119.7755 |
| APN: | NONE SPECIFIED |
| Past Use: | AGRICULTURAL - ROW CROPS |
| Potential COC: | NONE SPECIFIED, No Contaminants found |
| Confirmed COC: | NONE SPECIFIED |
| Potential Description: | NMA |
| Alias Name: | CINNAMON DRIVE SCHOOL SITE |
| Alias Type: | Alternate Name |
| Alias Name: | LEMOORE UNION ELEM. SCH. DIST. CINNAMON |
| Alias Type: | Alternate Name |
| Alias Name: | LEMOORE UNION ELEMENTARY SCHOOL DISTRICT |
| Alias Type: | Alternate Name |
| Alias Name: | 101173 |
| Alias Type: | Project Code (Site Code) |
| Alias Name: | 16010002 |
| Alias Type: | Envirostor ID Number |

Completed Info:

| | |
|---|---|
| Completed Area Name: | PROJECT WIDE |
| Completed Sub Area Name: | Not reported |
| Completed Document Type: | Phase 1 |
| Completed Date: | 08/18/1999 |
| Comments: | Not reported |
| | |
| Completed Area Name: | PROJECT WIDE |
| Completed Sub Area Name: | Not reported |
| Completed Document Type: | Site Inspections/Visit (Non LUR) |
| Completed Date: | 08/10/1999 |
| Comments: | Not reported |
| | |
| Completed Area Name: | PROJECT WIDE |
| Completed Sub Area Name: | Not reported |
| Completed Document Type: | Cost Recovery Closeout Memo |
| Completed Date: | 09/07/1999 |
| Comments: | Not reported |
| | |
| Future Area Name: | Not reported |

**CINNAMON DRIVE SCHOOL SITE (Continued)** **S118756487**

| | |
|---|---|
| Future Sub Area Name: | Not reported |
| Future Document Type: | Not reported |
| Future Due Date: | Not reported |
| Schedule Area Name: | Not reported |
| Schedule Sub Area Name: | Not reported |
| Schedule Document Type: | Not reported |
| Schedule Due Date: | Not reported |
| Schedule Revised Date: | Not reported |

CUPA KINGS:

| | |
|---|---|
| Region: | KING |
| Facility Id: | FA0002679 |
| Status: | A |
| PE: | 1623 |
| Mailing Address 1: | 100 VINE ST |
| Mailing State: | CA |
| Mailing Zip: | 93245 |
| Decode of Fstatus: | Active |
| Mailing Name: | CINNAMON ELEMENTARY |

Count: 0 records.

## ORPHAN SUMMARY

| City | EDR ID | Site Name | Site Address | Zip | Database(s) |
| --- | --- | --- | --- | --- | --- |
| | | NO SITES FOUND | | | |

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

**Number of Days to Update:** Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

## STANDARD ENVIRONMENTAL RECORDS

### *Federal NPL site list*

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 12/12/2018
Date Data Arrived at EDR: 12/28/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 14

Source: EPA
Telephone: N/A
Last EDR Contact: 02/15/2019
Next Scheduled EDR Contact: 04/15/2019
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 5
Telephone 312-886-6686

EPA Region 10
Telephone 206-553-8665

EPA Region 6
Telephone: 214-655-6659

EPA Region 7
Telephone: 913-551-7247

EPA Region 8
Telephone: 303-312-6774

EPA Region 9
Telephone: 415-947-4246

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 12/12/2018
Date Data Arrived at EDR: 12/28/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 14

Source: EPA
Telephone: N/A
Last EDR Contact: 02/15/2019
Next Scheduled EDR Contact: 04/15/2019
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

| | |
|---|---|
| Date of Government Version: 10/15/1991 | Source: EPA |
| Date Data Arrived at EDR: 02/02/1994 | Telephone: 202-564-4267 |
| Date Made Active in Reports: 03/30/1994 | Last EDR Contact: 08/15/2011 |
| Number of Days to Update: 56 | Next Scheduled EDR Contact: 11/28/2011 |
| | Data Release Frequency: No Update Planned |

***Federal Delisted NPL site list***

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

| | |
|---|---|
| Date of Government Version: 12/12/2018 | Source: EPA |
| Date Data Arrived at EDR: 12/28/2018 | Telephone: N/A |
| Date Made Active in Reports: 01/11/2019 | Last EDR Contact: 02/15/2019 |
| Number of Days to Update: 14 | Next Scheduled EDR Contact: 04/15/2019 |
| | Data Release Frequency: Quarterly |

***Federal CERCLIS list***

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

| | |
|---|---|
| Date of Government Version: 11/07/2016 | Source: Environmental Protection Agency |
| Date Data Arrived at EDR: 01/05/2017 | Telephone: 703-603-8704 |
| Date Made Active in Reports: 04/07/2017 | Last EDR Contact: 01/04/2019 |
| Number of Days to Update: 92 | Next Scheduled EDR Contact: 04/15/2019 |
| | Data Release Frequency: Varies |

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

| | |
|---|---|
| Date of Government Version: 12/12/2018 | Source: EPA |
| Date Data Arrived at EDR: 12/28/2018 | Telephone: 800-424-9346 |
| Date Made Active in Reports: 01/11/2019 | Last EDR Contact: 02/15/2019 |
| Number of Days to Update: 14 | Next Scheduled EDR Contact: 04/29/2019 |
| | Data Release Frequency: Quarterly |

***Federal CERCLIS NFRAP site list***

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 12/13/2018
Date Data Arrived at EDR: 12/28/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 14

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 02/15/2019
Next Scheduled EDR Contact: 04/29/2019
Data Release Frequency: Quarterly

***Federal RCRA CORRACTS facilities list***

CORRACTS: Corrective Action Report
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 12/03/2018
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Quarterly

***Federal RCRA non-CORRACTS TSD facilities list***

RCRA-TSDF: RCRA - Treatment, Storage and Disposal
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/03/2018
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Quarterly

***Federal RCRA generators list***

RCRA-LQG: RCRA - Large Quantity Generators
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/03/2018
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/03/2018
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/03/2018
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Quarterly

***Federal institutional controls / engineering controls registries***

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 10/17/2018
Date Data Arrived at EDR: 10/25/2018
Date Made Active in Reports: 12/07/2018
Number of Days to Update: 43

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 02/07/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 07/31/2018
Date Data Arrived at EDR: 08/28/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 17

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/04/2019
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 07/31/2018
Date Data Arrived at EDR: 08/28/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 17

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/04/2019
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Varies

***Federal ERNS list***

ERNS: Emergency Response Notification System
Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/24/2018
Date Data Arrived at EDR: 09/25/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 45

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 02/08/2019
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Quarterly

***State- and tribal - equivalent NPL***

RESPONSE: State Response Sites
Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 10/29/2018
Date Data Arrived at EDR: 10/30/2018
Date Made Active in Reports: 12/13/2018
Number of Days to Update: 44

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/29/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Quarterly

***State- and tribal - equivalent CERCLIS***

ENVIROSTOR: EnviroStor Database
The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 10/29/2018
Date Data Arrived at EDR: 10/30/2018
Date Made Active in Reports: 12/13/2018
Number of Days to Update: 44

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/29/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Quarterly

***State and tribal landfill and/or solid waste disposal site lists***

SWF/LF (SWIS): Solid Waste Information System
Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 11/12/2018
Date Data Arrived at EDR: 11/14/2018
Date Made Active in Reports: 12/13/2018
Number of Days to Update: 29

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 02/12/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Quarterly

***State and tribal leaking storage tank lists***

LUST REG 9: Leaking Underground Storage Tank Report
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)
Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 12/11/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Quarterly

LUST REG 1: Active Toxic Site Investigation
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List
Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 04/10/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 04/25/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 04/24/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/13/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 05/08/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 04/01/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

CPS-SLIC: Statewide SLIC Cases (GEOTRACKER)

Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

***State and tribal registered storage tank lists***

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 05/15/2017
Date Data Arrived at EDR: 05/30/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 136

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 01/08/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Varies

MILITARY UST SITES: Military UST Sites (GEOTRACKER)
Military ust sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

UST CLOSURE: Proposed Closure of Underground Storage Tank (UST) Cases
UST cases that are being considered for closure by either the State Water Resources Control Board or the Executive Director have been posted for a 60-day public comment period. UST Case Closures being proposed for consideration by the State Water Resources Control Board. These are primarily UST cases that meet closure criteria under the decisional framework in State Water Board Resolution No. 92-49 and other Board orders. UST Case Closures proposed for consideration by the Executive Director pursuant to State Water Board Resolution No. 2012-0061. These are cases that meet the criteria of the Low-Threat UST Case Closure Policy. UST Case Closure Review Denials and Approved Orders.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/12/2018
Date Made Active in Reports: 01/16/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 12/11/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 04/01/2019
Data Release Frequency: Quarterly

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 04/25/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/13/2018
Date Data Arrived at EDR: 05/18/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 63

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

| | |
|---|---|
| Date of Government Version: 04/10/2018 | Source: EPA Region 9 |
| Date Data Arrived at EDR: 05/18/2018 | Telephone: 415-972-3368 |
| Date Made Active in Reports: 07/20/2018 | Last EDR Contact: 01/25/2019 |
| Number of Days to Update: 63 | Next Scheduled EDR Contact: 05/06/2019 |
| | Data Release Frequency: Varies |

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

| | |
|---|---|
| Date of Government Version: 04/24/2018 | Source: EPA Region 7 |
| Date Data Arrived at EDR: 05/18/2018 | Telephone: 913-551-7003 |
| Date Made Active in Reports: 07/20/2018 | Last EDR Contact: 01/25/2019 |
| Number of Days to Update: 63 | Next Scheduled EDR Contact: 05/06/2019 |
| | Data Release Frequency: Varies |

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

| | |
|---|---|
| Date of Government Version: 04/12/2018 | Source: EPA Region 10 |
| Date Data Arrived at EDR: 05/18/2018 | Telephone: 206-553-2857 |
| Date Made Active in Reports: 07/20/2018 | Last EDR Contact: 01/25/2019 |
| Number of Days to Update: 63 | Next Scheduled EDR Contact: 05/06/2019 |
| | Data Release Frequency: Varies |

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

| | |
|---|---|
| Date of Government Version: 04/12/2018 | Source: EPA Region 5 |
| Date Data Arrived at EDR: 05/18/2018 | Telephone: 312-886-6136 |
| Date Made Active in Reports: 07/20/2018 | Last EDR Contact: 01/25/2019 |
| Number of Days to Update: 63 | Next Scheduled EDR Contact: 05/06/2019 |
| | Data Release Frequency: Varies |

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

| | |
|---|---|
| Date of Government Version: 05/08/2018 | Source: EPA Region 4 |
| Date Data Arrived at EDR: 05/18/2018 | Telephone: 404-562-9424 |
| Date Made Active in Reports: 07/20/2018 | Last EDR Contact: 01/25/2019 |
| Number of Days to Update: 63 | Next Scheduled EDR Contact: 05/06/2019 |
| | Data Release Frequency: Varies |

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

| | |
|---|---|
| Date of Government Version: 04/01/2018 | Source: EPA Region 6 |
| Date Data Arrived at EDR: 05/18/2018 | Telephone: 214-665-7591 |
| Date Made Active in Reports: 07/20/2018 | Last EDR Contact: 01/25/2019 |
| Number of Days to Update: 63 | Next Scheduled EDR Contact: 05/06/2019 |
| | Data Release Frequency: Varies |

***State and tribal voluntary cleanup sites***

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 10/29/2018
Date Data Arrived at EDR: 10/30/2018
Date Made Active in Reports: 12/13/2018
Number of Days to Update: 44

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/29/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Quarterly

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 12/19/2018
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

***State and tribal Brownfields sites***

BROWNFIELDS: Considered Brownfieds Sites Listing

A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 09/24/2018
Date Data Arrived at EDR: 09/25/2018
Date Made Active in Reports: 10/15/2018
Number of Days to Update: 20

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 12/21/2018
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Quarterly

**ADDITIONAL ENVIRONMENTAL RECORDS**

***Local Brownfield lists***

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 12/17/2018
Date Data Arrived at EDR: 12/18/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 24

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 12/18/2018
Next Scheduled EDR Contact: 04/01/2019
Data Release Frequency: Semi-Annually

***Local Lists of Landfill / Solid Waste Disposal Sites***

WMUDS/SWAT: Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 01/28/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: No Update Planned

SWRCY: Recycler Database

A listing of recycling facilities in California.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/12/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 34

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing

A listing of registered waste tire haulers.

Date of Government Version: 09/26/2018
Date Data Arrived at EDR: 09/28/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 34

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 02/12/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 01/29/2019
Next Scheduled EDR Contact: 05/13/2019
Data Release Frequency: Varies

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 02/01/2019
Next Scheduled EDR Contact: 05/13/2019
Data Release Frequency: Varies

***Local Lists of Hazardous waste / Contaminated Sites***

US HIST CDL: National Clandestine Laboratory Register
A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 09/21/2018
Date Data Arrived at EDR: 09/21/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 49

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database
The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program
This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 10/29/2018
Date Data Arrived at EDR: 10/30/2018
Date Made Active in Reports: 12/13/2018
Number of Days to Update: 44

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/29/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs
A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/12/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 55

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Varies

TOXIC PITS: Toxic Pits Cleanup Act Sites
Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

CERS HAZ WASTE: CERS HAZ WASTE

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

Date of Government Version: 10/22/2018
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/30/2018
Number of Days to Update: 38

Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 01/24/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Quarterly

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/21/2018
Date Data Arrived at EDR: 09/21/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 49

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Quarterly

***Local Lists of Registered Storage Tanks***

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 12/04/2018
Date Data Arrived at EDR: 12/06/2018
Date Made Active in Reports: 12/14/2018
Number of Days to Update: 8

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SAN FRANCISCO AST: Aboveground Storage Tank Site Listing

Aboveground storage tank sites

Date of Government Version: 09/11/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 10/11/2018
Number of Days to Update: 29

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Varies

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CERS TANKS: California Environmental Reporting System (CERS) Tanks

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

Date of Government Version: 10/22/2018
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/30/2018
Number of Days to Update: 38

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 01/24/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Quarterly

***Local Land Records***

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 11/29/2018
Date Data Arrived at EDR: 12/04/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 38

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 11/29/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 12/12/2018
Date Data Arrived at EDR: 12/28/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 14

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 02/15/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Semi-Annually

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 12/03/2018
Date Data Arrived at EDR: 12/05/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 37

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 12/05/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Semi-Annually

***Records of Emergency Release Reports***

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 03/26/2018
Date Data Arrived at EDR: 03/27/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 73

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 02/08/2019
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Quarterly

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 04/06/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 51

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 01/24/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Semi-Annually

LDS: Land Disposal Sites Listing (GEOTRACKER)

Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)

Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

***Other Ascertainable Records***

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/03/2018
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 11/19/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 01/11/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 01/11/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 02/15/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 08/31/2018
Date Data Arrived at EDR: 09/25/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 45

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 02/04/2019
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 02/08/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 02/08/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/21/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 198

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 12/21/2018
Next Scheduled EDR Contact: 04/01/2019
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 01/10/2018
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 2

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 11/16/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 12/12/2018
Date Data Arrived at EDR: 12/28/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 14

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 02/15/2019
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 10/26/2018
Date Data Arrived at EDR: 11/06/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 66

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 01/22/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 08/13/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 36

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 02/15/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

PADS: PCB Activity Database System
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 09/14/2018
Date Data Arrived at EDR: 10/11/2018
Date Made Active in Reports: 12/07/2018
Number of Days to Update: 57

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 01/11/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System
The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 01/07/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/30/2016
Date Data Arrived at EDR: 09/08/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 43

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 01/22/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 12/05/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 12/03/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 05/24/2017
Date Data Arrived at EDR: 11/30/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 15

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 10/02/2018
Date Data Arrived at EDR: 10/03/2018
Date Made Active in Reports: 11/09/2018
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 01/03/2019
Next Scheduled EDR Contact: 04/15/2019
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data
Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 10/01/2018
Date Data Arrived at EDR: 10/30/2018
Date Made Active in Reports: 01/18/2019
Number of Days to Update: 80

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 01/29/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 09/30/2018
Date Data Arrived at EDR: 10/12/2018
Date Made Active in Reports: 12/07/2018
Number of Days to Update: 56

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 01/07/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Varies

BRS: Biennial Reporting System
The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 09/28/2017
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations
This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 01/07/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program
DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 08/08/2017
Date Data Arrived at EDR: 09/11/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 3

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites
Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 06/23/2017
Date Data Arrived at EDR: 10/11/2017
Date Made Active in Reports: 11/03/2017
Number of Days to Update: 23

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 12/14/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites
A listing of former lead smelter site locations.

Date of Government Version: 12/12/2018
Date Data Arrived at EDR: 12/28/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 14

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 02/15/2019
Next Scheduled EDR Contact: 04/15/2019
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites
A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)
The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File
Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/01/2018
Date Data Arrived at EDR: 08/29/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 37

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 11/30/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing
This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 11/30/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 11/30/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 09/10/2018
Date Data Arrived at EDR: 09/11/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 3

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 12/19/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 11/15/2018
Date Data Arrived at EDR: 12/05/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 37

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Quarterly

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 09/02/2018
Date Data Arrived at EDR: 09/05/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 9

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 01/07/2019
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 07/26/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 71

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 11/30/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Varies

UXO: Unexploded Ordnance Sites
A listing of unexploded ordnance site locations

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 06/19/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 87

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 01/14/2019
Next Scheduled EDR Contact: 04/29/2019
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 08/22/2018
Date Data Arrived at EDR: 08/22/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 44

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 11/19/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 09/24/2018
Date Data Arrived at EDR: 09/25/2018
Date Made Active in Reports: 10/16/2018
Number of Days to Update: 21

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 12/21/2018
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Quarterly

CUPA LIVERMORE-PLEASANTON: CUPA Facility Listing
list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 08/28/2018
Date Data Arrived at EDR: 08/30/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 63

Source: Livermore-Pleasanton Fire Department
Telephone: 925-454-2361
Last EDR Contact: 02/11/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Varies

CUPA SAN FRANCISCO CO: CUPA Facility Listing
Cupa facilities

Date of Government Version: 09/11/2018
Date Data Arrived at EDR: 09/12/2018
Date Made Active in Reports: 09/19/2018
Number of Days to Update: 7

Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Varies

DRYCLEAN AVAQMD: Antelope Valley Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the Antelope Valley Air Quality Management District.

Date of Government Version: 11/13/2018
Date Data Arrived at EDR: 12/04/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 42

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 11/29/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Varies

DRYCLEAN SOUTH COAST: South Coast Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 10/04/2018
Date Data Arrived at EDR: 10/05/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 27

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Varies

DRYCLEANERS: Cleaner Facilities
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 08/30/2018
Date Data Arrived at EDR: 09/27/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 35

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 11/29/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Annually

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/20/2018
Date Made Active in Reports: 08/06/2018
Number of Days to Update: 47

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 12/21/2018
Next Scheduled EDR Contact: 04/01/2019
Data Release Frequency: Varies

ENF: Enforcement Action Listing
A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 11/01/2018
Date Data Arrived at EDR: 11/02/2018
Date Made Active in Reports: 12/13/2018
Number of Days to Update: 41

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 10/19/2018
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/30/2018
Number of Days to Update: 38

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing
A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 11/18/2018
Date Data Arrived at EDR: 11/19/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 53

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 02/11/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 10/10/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 37

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 01/07/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Annually

ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 11/19/2018
Date Data Arrived at EDR: 11/19/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 53

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 11/19/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 11/19/2018
Date Data Arrived at EDR: 11/19/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 53

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 11/19/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database

A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 10/09/2018
Date Data Arrived at EDR: 10/10/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 37

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 01/08/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing

A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/12/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 34

Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing

The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 11/09/2018
Date Data Arrived at EDR: 12/05/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 37

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 12/05/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Varies

NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 11/12/2018
Date Data Arrived at EDR: 11/14/2018
Date Made Active in Reports: 12/13/2018
Number of Days to Update: 29

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 02/12/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing

A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 12/03/2018
Date Data Arrived at EDR: 12/05/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 37

Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 12/05/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Quarterly

PROC: Certified Processors Database

A listing of certified processors.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/12/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 34

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records

Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 09/19/2018
Date Data Arrived at EDR: 09/20/2018
Date Made Active in Reports: 10/19/2018
Number of Days to Update: 29

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 04/01/2019
Data Release Frequency: No Update Planned

UIC: UIC Listing

A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 04/27/2018
Date Data Arrived at EDR: 06/13/2018
Date Made Active in Reports: 07/17/2018
Number of Days to Update: 34

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 01/25/2019
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

UIC GEO: Underground Injection Control Sites (GEOTRACKER)

Underground control injection sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing

Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water boards review found that more than one-third of the region’s active disposal pits are operating without permission.

Date of Government Version: 05/08/2018
Date Data Arrived at EDR: 07/11/2018
Date Made Active in Reports: 09/13/2018
Number of Days to Update: 64

Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 01/11/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Varies

WDS: Waste Discharge System

Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Quarterly

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)

Military privatized sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

PROJECT: Project Sites (GEOTRACKER)

Projects sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

WDR: Waste Discharge Requirements Listing

In general, the Waste Discharge Requirements (WDRs) Program (sometimes also referred to as the "Non Chapter 15 (Non 15) Program") regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g., sewage, wastewater, etc.) that meet, and continue to meet, the preconditions listed for each specific exemption. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to section 20230 of Title 27.

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/12/2018
Date Made Active in Reports: 01/18/2019
Number of Days to Update: 37

Source: State Water Resources Control Board
Telephone: 916-341-5810
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Quarterly

CIWQS: California Integrated Water Quality System

The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

Date of Government Version: 12/03/2018
Date Data Arrived at EDR: 12/04/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 38

Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 12/04/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Varies

CERS: CalEPA Regulated Site Portal Data

The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

Date of Government Version: 10/22/2018
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/30/2018
Number of Days to Update: 38

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 01/24/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

WIP: Well Investigation Program Case List

Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 12/19/2018
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)

Non-Case Information sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)

Other Oil & Gas Projects sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)

Produced water ponds sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)
Sampling point - public sites

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

WELL STIM PROJ: Well Stimulation Project (GEOTRACKER)
Includes areas of groundwater monitoring plans, a depiction of the monitoring network, and the facilities, boundaries, and subsurface characteristics of the oilfield and the features (oil and gas wells, produced water ponds, UIC wells, water supply wells, etc?) being monitored

Date of Government Version: 12/10/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Varies

**EDR HIGH RISK HISTORICAL RECORDS**

***EDR Exclusive Records***

EDR MGP: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR’s researchers. Manufactured gas sites were used in the United States from the 1800’s to 1950’s to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations
EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR’s review was limited to those categories of sources that might, in EDR’s opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR’s HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

**EDR RECOVERED GOVERNMENT ARCHIVES**

***Exclusive Recovered Govt. Archives***

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

**COUNTY RECORDS**

ALAMEDA COUNTY:

CS ALAMEDA: Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 10/05/2018
Date Data Arrived at EDR: 10/10/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 22

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 01/07/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Semi-Annually

UST ALAMEDA: Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 10/05/2018
Date Data Arrived at EDR: 10/10/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 23

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 01/07/2019
Next Scheduled EDR Contact: 04/24/2047
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA AMADOR: CUPA Facility List
Cupa Facility List

Date of Government Version: 07/01/2018
Date Data Arrived at EDR: 07/24/2018
Date Made Active in Reports: 08/20/2018
Number of Days to Update: 27

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 01/04/2019
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA BUTTE: CUPA Facility Listing
Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 01/07/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 10/31/2018
Date Data Arrived at EDR: 12/04/2018
Date Made Active in Reports: 12/12/2018
Number of Days to Update: 8

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 12/21/2018
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List
Cupa facility list.

Date of Government Version: 05/23/2018
Date Data Arrived at EDR: 05/24/2018
Date Made Active in Reports: 07/13/2018
Number of Days to Update: 50

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

SL CONTRA COSTA: Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 11/26/2018
Date Data Arrived at EDR: 11/30/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 46

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 01/28/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA DEL NORTE: CUPA Facility List
Cupa Facility list

Date of Government Version: 08/16/2018
Date Data Arrived at EDR: 11/06/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 8

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 01/28/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA EL DORADO: CUPA Facility List
CUPA facility list.

Date of Government Version: 12/13/2018
Date Data Arrived at EDR: 12/18/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 28

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 01/28/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA FRESNO: CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 10/16/2018
Date Data Arrived at EDR: 10/18/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 27

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 12/26/2018
Next Scheduled EDR Contact: 04/15/2019
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA GLENN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

HUMBOLDT COUNTY:

CUPA HUMBOLDT: CUPA Facility List
CUPA facility list.

Date of Government Version: 12/11/2018
Date Data Arrived at EDR: 12/13/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 33

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 11/19/2018
Next Scheduled EDR Contact: 03/04/2019
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA IMPERIAL: CUPA Facility List
Cupa facility list.

Date of Government Version: 10/22/2018
Date Data Arrived at EDR: 10/25/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 20

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

INYO COUNTY:

CUPA INYO: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/03/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 72

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

KERN COUNTY:

UST KERN: Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 11/02/2018
Date Data Arrived at EDR: 11/07/2018
Date Made Active in Reports: 12/14/2018
Number of Days to Update: 37

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA KINGS: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 11/21/2018
Date Data Arrived at EDR: 11/27/2018
Date Made Active in Reports: 12/12/2018
Number of Days to Update: 15

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

LAKE COUNTY:

CUPA LAKE: CUPA Facility List
Cupa facility list

Date of Government Version: 11/07/2018
Date Data Arrived at EDR: 11/08/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 6

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 01/14/2019
Next Scheduled EDR Contact: 04/29/2019
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA LASSEN: CUPA Facility List
Cupa facility list

Date of Government Version: 10/15/2018
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 22

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

LOS ANGELES COUNTY:

AOCONCERN: Key Areas of Concerns in Los Angeles County
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office. Date of Government Version: 3/30/2009 Exide Site area is a cleanup plan of lead-impacted soil surrounding the former Exide Facility as designated by the DTSC. Date of Government Version: 7/17/2017

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: N/A
Telephone: N/A
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 04/01/2019
Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 09/20/2018
Date Data Arrived at EDR: 10/12/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 35

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 01/07/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 10/15/2018
Date Data Arrived at EDR: 10/16/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 31

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 01/15/2019
Next Scheduled EDR Contact: 04/29/2019
Data Release Frequency: Varies

LF LOS ANGELES CITY: City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2018
Date Data Arrived at EDR: 05/01/2018
Date Made Active in Reports: 05/14/2018
Number of Days to Update: 13

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 01/15/2019
Next Scheduled EDR Contact: 04/29/2019
Data Release Frequency: Varies

SITE MIT LOS ANGELES: Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 07/01/2018
Date Data Arrived at EDR: 10/16/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 31

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 02/01/2019
Next Scheduled EDR Contact: 04/29/2019
Data Release Frequency: Annually

UST EL SEGUNDO: City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 21

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 01/14/2019
Next Scheduled EDR Contact: 04/29/2019
Data Release Frequency: Semi-Annually

UST LONG BEACH: City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/09/2017
Date Data Arrived at EDR: 03/10/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 54

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Annually

UST TORRANCE: City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 10/02/2018
Date Data Arrived at EDR: 10/05/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 28

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA MADERA: CUPA Facility List
A listing of sites included in the county’s Certified Unified Program Agency database. California’s Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 11/26/2018
Date Data Arrived at EDR: 11/27/2018
Date Made Active in Reports: 12/12/2018
Number of Days to Update: 15

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 02/15/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

MARIN COUNTY:

UST MARIN: Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 09/26/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 29

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 01/14/2019
Next Scheduled EDR Contact: 04/15/2019
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA MERCED: CUPA Facility List
CUPA facility list.

Date of Government Version: 08/29/2018
Date Data Arrived at EDR: 08/31/2018
Date Made Active in Reports: 09/19/2018
Number of Days to Update: 19

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

MONO COUNTY:

CUPA MONO: CUPA Facility List
CUPA Facility List

Date of Government Version: 12/07/2018
Date Data Arrived at EDR: 12/11/2018
Date Made Active in Reports: 01/24/2019
Number of Days to Update: 44

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 12/06/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA MONTEREY: CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 10/29/2018
Date Data Arrived at EDR: 11/01/2018
Date Made Active in Reports: 11/16/2018
Number of Days to Update: 15

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 12/27/2018
Next Scheduled EDR Contact: 04/15/2019
Data Release Frequency: Varies

NAPA COUNTY:

LUST NAPA: Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 11/21/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: No Update Planned

UST NAPA: Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 11/28/2018
Date Data Arrived at EDR: 11/30/2018
Date Made Active in Reports: 12/14/2018
Number of Days to Update: 14

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 11/26/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List
CUPA facility list.

Date of Government Version: 11/06/2018
Date Data Arrived at EDR: 11/08/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 6

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 01/28/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 10/04/2018
Date Data Arrived at EDR: 11/14/2018
Date Made Active in Reports: 12/13/2018
Number of Days to Update: 29

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/04/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 10/04/2018
Date Data Arrived at EDR: 11/14/2018
Date Made Active in Reports: 12/13/2018
Number of Days to Update: 29

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/04/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 10/04/2018
Date Data Arrived at EDR: 11/06/2018
Date Made Active in Reports: 12/14/2018
Number of Days to Update: 38

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/05/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

PLACER COUNTY:

MS PLACER: Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 11/29/2018
Date Data Arrived at EDR: 12/04/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 38

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 11/29/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA PLUMAS: CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 07/19/2018
Date Data Arrived at EDR: 07/25/2018
Date Made Active in Reports: 09/05/2018
Number of Days to Update: 42

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

RIVERSIDE COUNTY:

LUST RIVERSIDE: Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 10/10/2018
Date Data Arrived at EDR: 10/12/2018
Date Made Active in Reports: 10/16/2018
Number of Days to Update: 4

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 12/17/2018
Next Scheduled EDR Contact: 04/01/2019
Data Release Frequency: Quarterly

UST RIVERSIDE: Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 10/10/2018
Date Data Arrived at EDR: 10/12/2018
Date Made Active in Reports: 11/05/2018
Number of Days to Update: 24

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 12/17/2018
Next Scheduled EDR Contact: 04/01/2019
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

CS SACRAMENTO: Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 08/03/2018
Date Data Arrived at EDR: 10/02/2018
Date Made Active in Reports: 11/01/2018
Number of Days to Update: 30

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 01/04/2019
Next Scheduled EDR Contact: 04/15/2019
Data Release Frequency: Quarterly

ML SACRAMENTO: Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 08/23/2018
Date Data Arrived at EDR: 10/02/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 31

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 12/28/2018
Next Scheduled EDR Contact: 04/15/2019
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List
Cupa facility list

Date of Government Version: 11/15/2018
Date Data Arrived at EDR: 11/16/2018
Date Made Active in Reports: 12/13/2018
Number of Days to Update: 27

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

PERMITS SAN BERNARDINO: Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 11/28/2018
Date Data Arrived at EDR: 11/30/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 42

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 02/19/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

HMMD SAN DIEGO: Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 12/03/2018
Date Data Arrived at EDR: 12/05/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 37

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 12/05/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Quarterly

LF SAN DIEGO: Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 04/18/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 56

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

SAN DIEGO CO LOP: Local Oversight Program Listing

A listing of all LOP release sites that are or were under the County of San Diego's jurisdiction. Included are closed or transferred cases, open cases, and cases that did not have a case type indicated. The cases without a case type are mostly complaints; however, some of them could be LOP cases.

Date of Government Version: 10/22/2018
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/30/2018
Number of Days to Update: 38

Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

SAN DIEGO CO. SAM: Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 11/29/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

LUST SAN FRANCISCO: Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

UST SAN FRANCISCO: Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/05/2018
Date Data Arrived at EDR: 11/06/2018
Date Made Active in Reports: 12/14/2018
Number of Days to Update: 38

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

UST SAN JOAQUIN: San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2018
Date Data Arrived at EDR: 06/26/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 15

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 04/01/2019
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List
Cupa Facility List.

Date of Government Version: 11/14/2018
Date Data Arrived at EDR: 11/15/2018
Date Made Active in Reports: 12/13/2018
Number of Days to Update: 28

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

SAN MATEO COUNTY:

BI SAN MATEO: Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 12/03/2018
Date Data Arrived at EDR: 12/12/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 34

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Annually

LUST SAN MATEO: Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 12/13/2018
Date Data Arrived at EDR: 12/18/2018
Date Made Active in Reports: 01/23/2019
Number of Days to Update: 36

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/10/2018
Next Scheduled EDR Contact: 12/24/2018
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA SANTA BARBARA: CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List
Cupa facility list

Date of Government Version: 11/16/2018
Date Data Arrived at EDR: 11/16/2018
Date Made Active in Reports: 12/13/2018
Number of Days to Update: 27

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

HIST LUST SANTA CLARA: HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LUST SANTA CLARA: LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 11/21/2018
Next Scheduled EDR Contact: 03/11/2019
Data Release Frequency: Annually

SAN JOSE HAZMAT: Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 11/01/2018
Date Data Arrived at EDR: 11/06/2018
Date Made Active in Reports: 12/14/2018
Number of Days to Update: 38

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA SANTA CRUZ: CUPA Facility List
CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA SHASTA: CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Varies

SOLANO COUNTY:

LUST SOLANO: Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 11/29/2018
Date Data Arrived at EDR: 12/04/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 38

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 11/29/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Quarterly

UST SOLANO: Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 11/29/2018
Date Data Arrived at EDR: 12/04/2018
Date Made Active in Reports: 12/14/2018
Number of Days to Update: 10

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 11/29/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List
Cupa Facility list

Date of Government Version: 12/21/2018
Date Data Arrived at EDR: 12/27/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 19

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 12/19/2018
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Varies

LUST SONOMA: Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 10/02/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 10/25/2018
Number of Days to Update: 21

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 01/07/2019
Next Scheduled EDR Contact: 04/08/2019
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List
Cupa facility list

Date of Government Version: 12/11/2018
Date Data Arrived at EDR: 12/13/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 33

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 12/13/2018
Next Scheduled EDR Contact: 04/29/2019
Data Release Frequency: Varies

SUTTER COUNTY:

UST SUTTER: Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 09/18/2018
Date Data Arrived at EDR: 09/20/2018
Date Made Active in Reports: 10/25/2018
Number of Days to Update: 35

Source: Sutter County Environmental Health Services
Telephone: 530-822-7500
Last EDR Contact: 11/29/2018
Next Scheduled EDR Contact: 03/18/2019
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List
Cupa facilities

Date of Government Version: 12/13/2018
Date Data Arrived at EDR: 12/18/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 28

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List
Cupa facility list

Date of Government Version: 10/22/2018
Date Data Arrived at EDR: 10/25/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 20

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 01/17/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

TULARE COUNTY:

CUPA TULARE: CUPA Facility List
Cupa program facilities

Date of Government Version: 12/26/2018
Date Data Arrived at EDR: 12/27/2018
Date Made Active in Reports: 01/15/2019
Number of Days to Update: 19

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 01/31/2019
Next Scheduled EDR Contact: 05/20/2019
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA TUOLUMNE: CUPA Facility List
Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 61

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 02/13/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Varies

VENTURA COUNTY:

BWT VENTURA: Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 09/26/2018
Date Data Arrived at EDR: 10/25/2018
Date Made Active in Reports: 11/30/2018
Number of Days to Update: 36

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 01/22/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Quarterly

LF VENTURA: Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 12/26/2018
Next Scheduled EDR Contact: 04/15/2019
Data Release Frequency: Annually

LUST VENTURA: Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 02/07/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: Quarterly

MED WASTE VENTURA: Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 09/25/2018
Date Data Arrived at EDR: 10/25/2018
Date Made Active in Reports: 11/30/2018
Number of Days to Update: 36

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 01/22/2019
Next Scheduled EDR Contact: 05/06/2019
Data Release Frequency: Quarterly

UST VENTURA: Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 11/26/2018
Date Data Arrived at EDR: 12/12/2018
Date Made Active in Reports: 01/16/2019
Number of Days to Update: 35

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Quarterly

YOLO COUNTY:

UST YOLO: Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 12/26/2018
Date Data Arrived at EDR: 01/03/2019
Date Made Active in Reports: 01/16/2019
Number of Days to Update: 13

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 12/26/2018
Next Scheduled EDR Contact: 04/15/2019
Data Release Frequency: Annually

YUBA COUNTY:

CUPA YUBA: CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 11/05/2018
Date Data Arrived at EDR: 11/07/2018
Date Made Active in Reports: 11/14/2018
Number of Days to Update: 7

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 01/28/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Varies

**OTHER DATABASE(S)**

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 11/12/2018
Date Data Arrived at EDR: 11/14/2018
Date Made Active in Reports: 12/04/2018
Number of Days to Update: 20

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 02/12/2019
Next Scheduled EDR Contact: 05/27/2019
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 07/13/2018
Date Made Active in Reports: 08/01/2018
Number of Days to Update: 19

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 01/07/2019
Next Scheduled EDR Contact: 04/22/2019
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 01/30/2019
Date Made Active in Reports: 02/14/2019
Number of Days to Update: 15

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 01/30/2019
Next Scheduled EDR Contact: 05/11/2019
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/27/2018
Number of Days to Update: 35

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 01/11/2019
Next Scheduled EDR Contact: 04/29/2019
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 02/23/2018
Date Made Active in Reports: 04/09/2018
Number of Days to Update: 45

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 02/19/2019
Next Scheduled EDR Contact: 06/03/2019
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/15/2018
Date Made Active in Reports: 07/09/2018
Number of Days to Update: 24

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 12/07/2018
Next Scheduled EDR Contact: 03/25/2019
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: PennWell Corporation
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association’s annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics’ primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics’ primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

**STREET AND ADDRESS INFORMATION**

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# GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

**TARGET PROPERTY ADDRESS**

SEMAS PROPERTY
18TH AVENUE AND WEST LACEY BOULEVARD
LEMOORE, CA 93245

**TARGET PROPERTY COORDINATES**

| | |
|---|---|
| Latitude (North): | 36.324438 - 36˚ 19’ 27.98’’ |
| Longitude (West): | 119.77618 - 119˚ 46’ 34.25’’ |
| Universal Tranverse Mercator: | Zone 11 |
| UTM X (Meters): | 250783.1 |
| UTM Y (Meters): | 4023311.0 |
| Elevation: | 234 ft. above sea level |

**USGS TOPOGRAPHIC MAP**

| | |
|---|---|
| Target Property Map: | 5619120 LEMOORE, CA |
| Version Date: | 2012 |

EDR’s GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

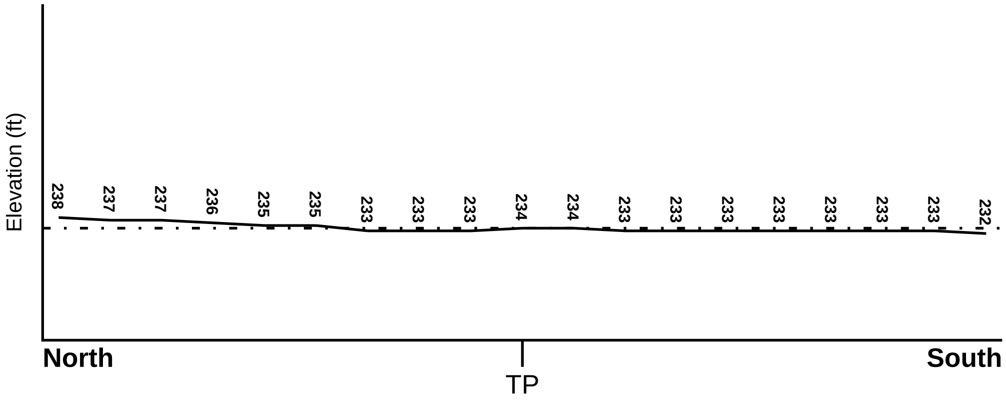
## TOPOGRAPHIC INFORMATION

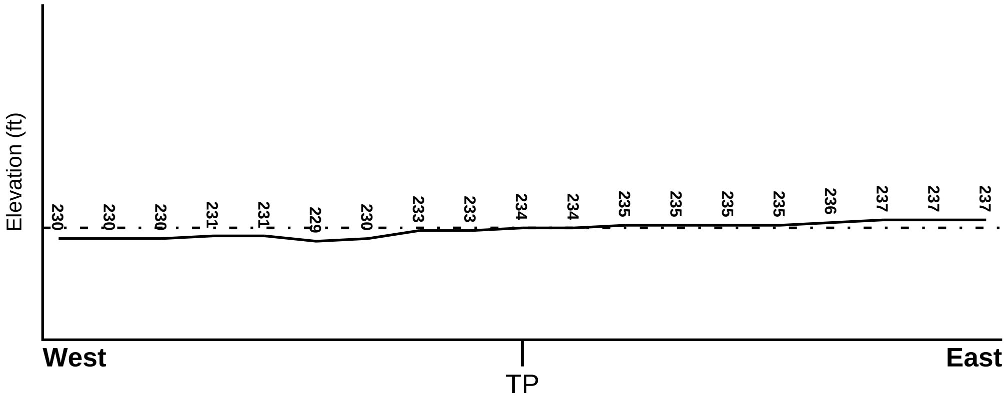
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

### TARGET PROPERTY TOPOGRAPHY

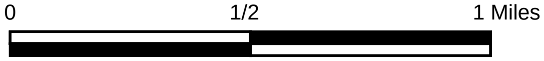
General Topographic Gradient: General West

### SURROUNDING TOPOGRAPHY: ELEVATION PROFILES




**Target Property Elevation: 234 ft.**




Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

**HYDROLOGIC INFORMATION**

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

**FEMA FLOOD ZONE**

| Flood Plain Panel at Target Property | FEMA Source Type |
|---|---|
| 06031C0160D | FEMA FIRM Flood data |

| Additional Panels in search area: | FEMA Source Type |
|---|---|
| 06031C0170D | FEMA FIRM Flood data |
| 0600860050B | FEMA Q3 Flood data |
| 0600890001A | FEMA Q3 Flood data |
| 06031C0167C | FEMA FIRM Flood data |

**NATIONAL WETLAND INVENTORY**

| NWI Quad at Target Property | NWI Electronic Data Coverage |
|---|---|
| LEMOORE | YES - refer to the Overview Map and Detail Map |

**HYDROGEOLOGIC INFORMATION**

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

***Site-Specific Hydrogeological Data*:***

| | |
|---|---|
| Search Radius: | 1.25 miles |
| Status: | Not found |

**AQUIFLOW®**

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

| MAP ID | LOCATION FROM TP | GENERAL DIRECTION GROUNDWATER FLOW |
|---|---|---|
| Not Reported | | |

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

# GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

## GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

## GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

**ROCK STRATIGRAPHIC UNIT**

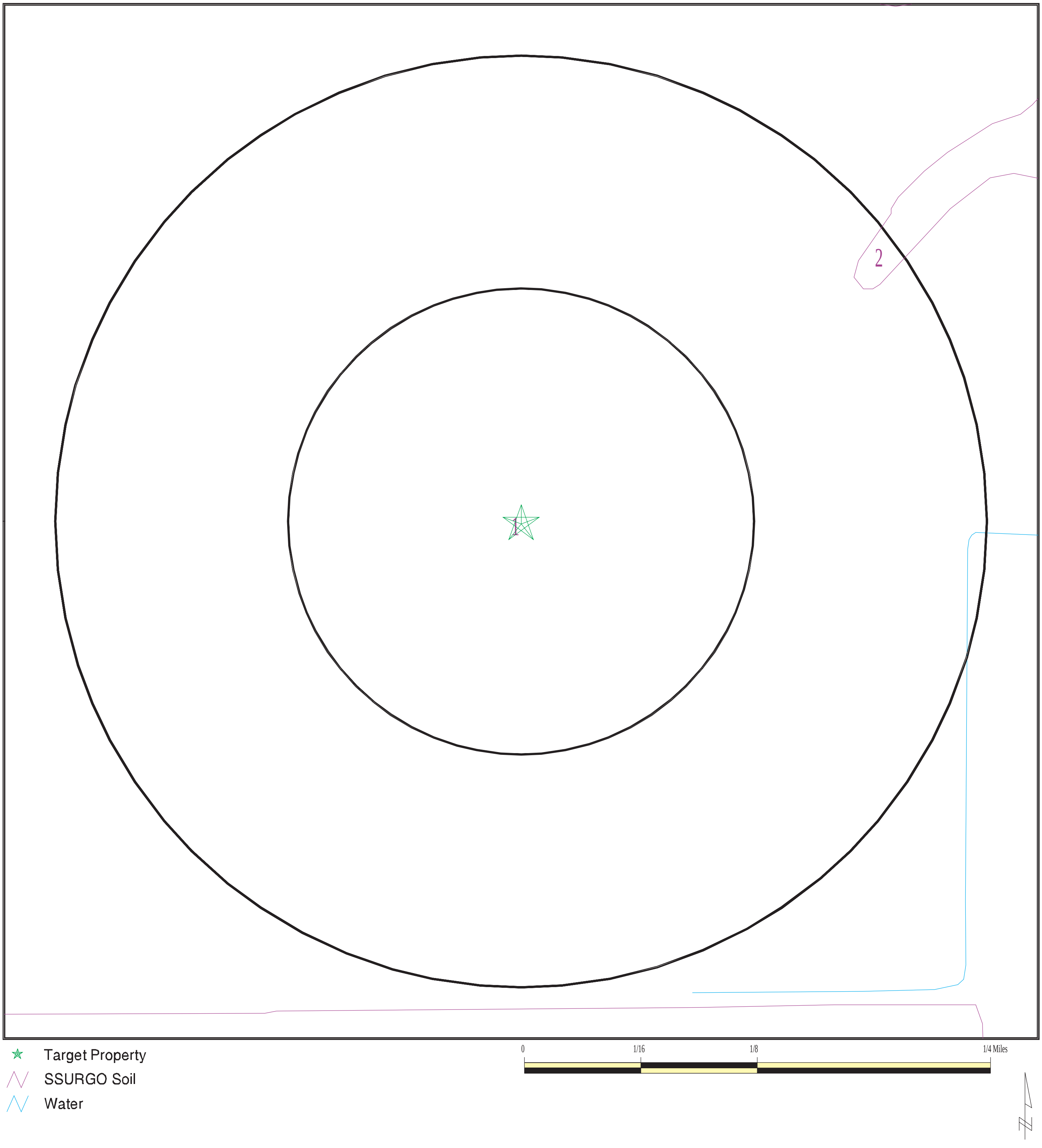
| | |
|---|---|
| Era: | Cenozoic |
| System: | Quaternary |
| Series: | Quaternary |
| Code: | Q *(decoded above as Era, System & Series)* |

**GEOLOGIC AGE IDENTIFICATION**

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

# SSURGO SOIL MAP - 5566933.2s




SITE NAME: Semas Property
ADDRESS: 18th Avenue and West Lacey Boulevard
LEMOORE CA 93245
LAT/LONG: 36.324438 / 119.77618

CLIENT: Partner Engineering and Science, Inc.
CONTACT: Colleen Tubridy
INQUIRY #: 5566933.2s
DATE: February 20, 2019 12:15 pm



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**DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY**

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

---

**Soil Map ID: 1**

Soil Component Name: NORD

Soil Surface Texture:
Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

| Soil Layer Information | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Boundary | | | Classification | | Saturated hydraulic conductivity micro m/sec | Soil Reaction (pH) |
| Layer | Upper | Lower | Soil Texture Class | AASHTO Group | Unified Soil | | |
| 1 | 0 inches | 18 inches | | Not reported | Not reported | Max: 14 Min: 4 | Max: 8.4 Min: 7.4 |
| 2 | 18 inches | 72 inches | | Not reported | Not reported | Max: 14 Min: 4 | Max: 8.4 Min: 7.4 |

---

**Soil Map ID: 2**

Soil Component Name: WHITEWOLF

Soil Surface Texture:
Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

| Soil Layer Information | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Boundary | | | Classification | | Saturated hydraulic conductivity micro m/sec | |
| Layer | Upper | Lower | Soil Texture Class | AASHTO Group | Unified Soil | | Soil Reaction (pH) |
| 1 | 0 inches | 9 inches | | Not reported | Not reported | Max: 141<br>Min: 42 | Max: 8.4<br>Min: 6.1 |
| 2 | 9 inches | 59 inches | | Not reported | Not reported | Max: 141<br>Min: 42 | Max: 8.4<br>Min: 6.1 |

## LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

## WELL SEARCH DISTANCE INFORMATION

| DATABASE | SEARCH DISTANCE (miles) |
|---|---|
| Federal USGS | 1.000 |
| Federal FRDS PWS | Nearest PWS within 1 mile |
| State Database | 1.000 |

## FEDERAL USGS WELL INFORMATION

| MAP ID | WELL ID | LOCATION FROM TP |
|---|---|---|
| 1 | USGS40000172187 | 1/4 - 1/2 Mile NW |
| 2 | USGS40000172273 | 1/4 - 1/2 Mile North |
| 4 | USGS40000172052 | 1/2 - 1 Mile SSW |
| 5 | USGS40000172035 | 1/2 - 1 Mile South |
| 6 | USGS40000172301 | 1/2 - 1 Mile NW |

## FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

| MAP ID | WELL ID | LOCATION FROM TP |
|---|---|---|

No PWS System Found

Note: PWS System location is not always the same as well location.

## STATE DATABASE WELL INFORMATION

| MAP ID | WELL ID | LOCATION FROM TP |
|---|---|---|

**STATE DATABASE WELL INFORMATION**

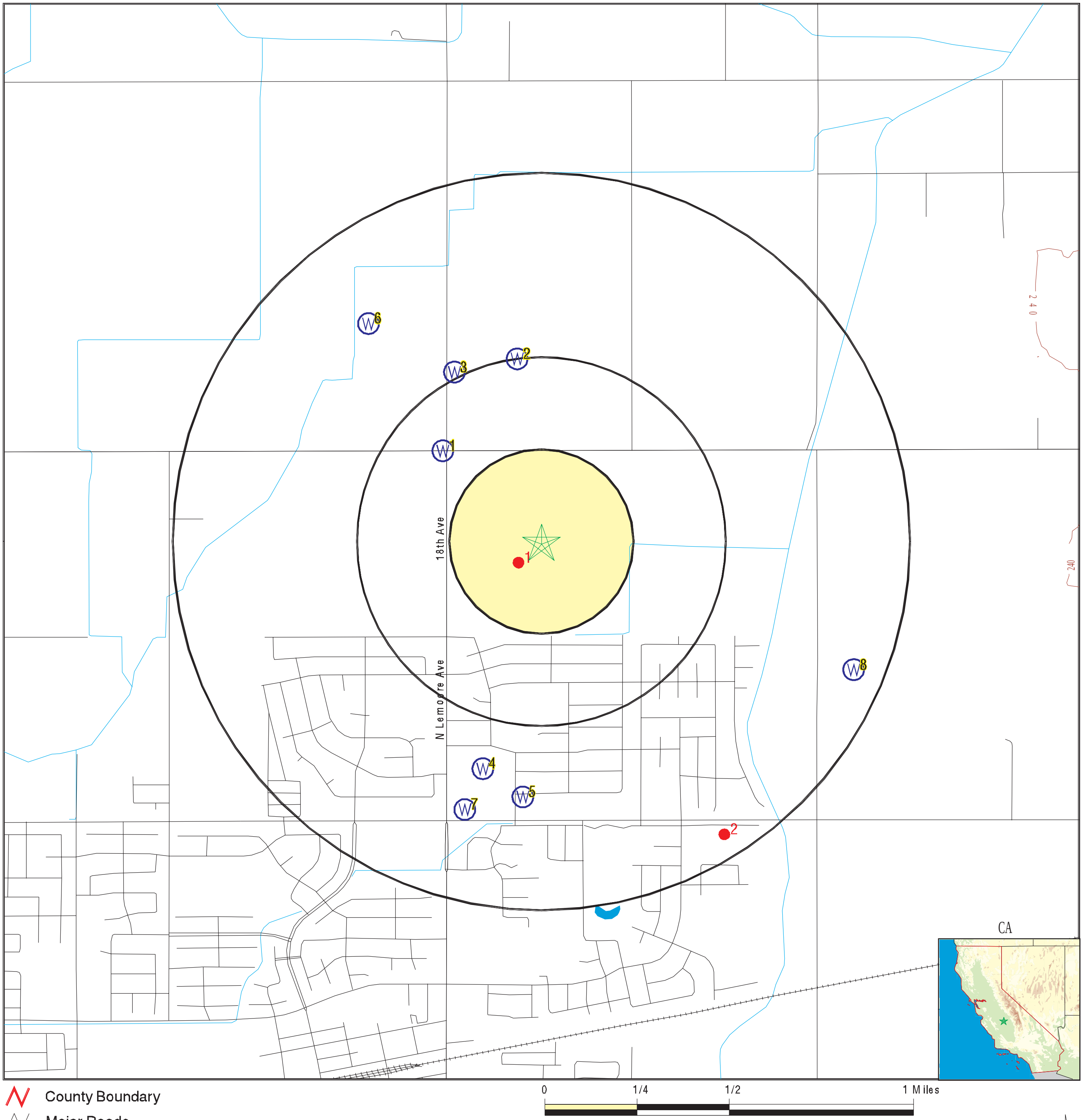
| MAP ID | WELL ID | LOCATION FROM TP |
|---|---|---|
| 3 | CADW60000025382 | 1/2 - 1 Mile NNW |
| 7 | CADW60000025386 | 1/2 - 1 Mile SSW |
| 8 | CADW60000002383 | 1/2 - 1 Mile ESE |

**OTHER STATE DATABASE INFORMATION**

**STATE OIL/GAS WELL INFORMATION**

| MAP ID | WELL ID | LOCATION FROM TP |
|---|---|---|
| 1 | CAOG11000277705 | 0 - 1/8 Mile SW |
| 2 | CAOG11000278271 | 1/2 - 1 Mile SSE |

# PHYSICAL SETTING SOURCE MAP - 5566933.2s




County Boundary
Major Roads
Contour Lines
Earthquake Fault Lines
Earthquake epicenter, Richter 5 or greater
Water Wells
Public Water Supply Wells
Cluster of Multiple Icons

Groundwater Flow Direction
Indeterminate Groundwater Flow at Location
Groundwater Flow Varies at Location
Closest Hydrogeological Data
Oil, gas or related wells

| | |
|---|---|
| SITE NAME: | Semas Property |
| ADDRESS: | 18th Avenue and West Lacey Boulevard |
| | LEMOORE CA 93245 |
| LAT/LONG: | 36.324438 / 119.77618 |

| | |
|---|---|
| CLIENT: | Partner Engineering and Science, Inc. |
| CONTACT: | Colleen Tubridy |
| INQUIRY #: | 5566933.2s |
| DATE: | February 20, 2019 12:15 pm |



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Map ID
Direction
Distance
Elevation | Database | EDR ID Number

**1**
**NW**
**1/4 - 1/2 Mile**
**Lower**

**FED USGS** **USGS40000172187**

| | | | |
|---|---|---|---|
| Organization ID: | USGS-CA | | |
| Organization Name: | USGS California Water Science Center | | |
| Monitor Location: | 018S020E34A001M | Type: | Well |
| Description: | TULARE BASIN DRAIN PROJECT | | |
| HUC: | 18030012 | Drainage Area: | Not Reported |
| Drainage Area Units: | Not Reported | Contrib Drainage Area: | Not Reported |
| Contrib Drainage Area Unts: | Not Reported | Aquifer: | Central Valley aquifer system |
| Formation Type: | Not Reported | Aquifer Type: | Not Reported |
| Construction Date: | Not Reported | Well Depth: | 12 |
| Well Depth Units: | ft | Well Hole Depth: | Not Reported |
| Well Hole Depth Units: | Not Reported | | |

| | | | |
|---|---|---|---|
| Ground water levels,Number of Measurements: | 1 | Level reading date: | 1989-05 |
| Feet below surface: | 11.4 | Feet to sea level: | Not Reported |
| Note: | Not Reported | | |

---

**2**
**North**
**1/4 - 1/2 Mile**
**Higher**

**FED USGS** **USGS40000172273**

| | | | |
|---|---|---|---|
| Organization ID: | USGS-CA | | |
| Organization Name: | USGS California Water Science Center | | |
| Monitor Location: | 018S020E26N001M | Type: | Well |
| Description: | Not Reported | HUC: | 18030012 |
| Drainage Area: | Not Reported | Drainage Area Units: | Not Reported |
| Contrib Drainage Area: | Not Reported | Contrib Drainage Area Unts: | Not Reported |
| Aquifer: | Central Valley aquifer system | | |
| Formation Type: | Not Reported | Aquifer Type: | Not Reported |
| Construction Date: | Not Reported | Well Depth: | 19 |
| Well Depth Units: | ft | Well Hole Depth: | Not Reported |
| Well Hole Depth Units: | Not Reported | | |

| | | | |
|---|---|---|---|
| Ground water levels,Number of Measurements: | 1 | Level reading date: | 1961-05-03 |
| Feet below surface: | 11.70 | Feet to sea level: | Not Reported |
| Note: | Not Reported | | |

---

**3**
**NNW**
**1/2 - 1 Mile**
**Lower**

**CA WELLS** **CADW60000025382**

| | | | |
|---|---|---|---|
| Objectid: | 25382 | Latitude: | 36.3311 |
| Longitude: | -119.7804 | Site code: | 363311N1197804W001 |
| State well numbe: | 18S20E26N001M | Local well name: | ’’ |
| Well use id: | 6 | Well use descrip: | Unknown |
| County id: | 16 | County name: | Kings |
| Basin code: | ’5-22.12’ | Basin desc: | Tulare Lake |
| Dwr region id: | 80237 | Dwr region: | South Central Region Office |
| Site id: | CADW60000025382 | | |

| Map ID<br>Direction<br>Distance<br>Elevation | Database | EDR ID Number |
|---|---|---|
| **4**<br>**SSW**<br>**1/2 - 1 Mile**<br>**Lower** | **FED USGS** | **USGS40000172052** |

| | | | |
|---|---|---|---|
| Organization ID: | USGS-CA | | |
| Organization Name: | USGS California Water Science Center | | |
| Monitor Location: | 018S020E34R001M | Type: | Well |
| Description: | Not Reported | HUC: | 18030012 |
| Drainage Area: | Not Reported | Drainage Area Units: | Not Reported |
| Contrib Drainage Area: | Not Reported | Contrib Drainage Area Unts: | Not Reported |
| Aquifer: | Central Valley aquifer system | | |
| Formation Type: | Not Reported | Aquifer Type: | Not Reported |
| Construction Date: | 19600101 | Well Depth: | 351 |
| Well Depth Units: | ft | Well Hole Depth: | Not Reported |
| Well Hole Depth Units: | Not Reported | | |

---

| Map ID<br>Direction<br>Distance<br>Elevation | Database | EDR ID Number |
|---|---|---|
| **5**<br>**South**<br>**1/2 - 1 Mile**<br>**Lower** | **FED USGS** | **USGS40000172035** |

| | | | |
|---|---|---|---|
| Organization ID: | USGS-CA | | |
| Organization Name: | USGS California Water Science Center | | |
| Monitor Location: | 018S020E35N001M | Type: | Well |
| Description: | Not Reported | HUC: | 18030012 |
| Drainage Area: | Not Reported | Drainage Area Units: | Not Reported |
| Contrib Drainage Area: | Not Reported | Contrib Drainage Area Unts: | Not Reported |
| Aquifer: | Central Valley aquifer system | | |
| Formation Type: | Not Reported | Aquifer Type: | Not Reported |
| Construction Date: | 19560101 | Well Depth: | 50 |
| Well Depth Units: | ft | Well Hole Depth: | Not Reported |
| Well Hole Depth Units: | Not Reported | | |

| | | | |
|---|---|---|---|
| Ground water levels,Number of Measurements: | 1 | Level reading date: | 1961-12-11 |
| Feet below surface: | 14.30 | Feet to sea level: | Not Reported |
| Note: | Not Reported | | |

---

| Map ID<br>Direction<br>Distance<br>Elevation | Database | EDR ID Number |
|---|---|---|
| **6**<br>**NW**<br>**1/2 - 1 Mile**<br>**Lower** | **FED USGS** | **USGS40000172301** |

| | | | |
|---|---|---|---|
| Organization ID: | USGS-CA | | |
| Organization Name: | USGS California Water Science Center | | |
| Monitor Location: | 018S020E27K002M | Type: | Well |
| Description: | Not Reported | HUC: | 18030012 |
| Drainage Area: | Not Reported | Drainage Area Units: | Not Reported |
| Contrib Drainage Area: | Not Reported | Contrib Drainage Area Unts: | Not Reported |
| Aquifer: | Central Valley aquifer system | | |
| Formation Type: | Not Reported | Aquifer Type: | Not Reported |
| Construction Date: | 19590101 | Well Depth: | 64 |
| Well Depth Units: | ft | Well Hole Depth: | Not Reported |
| Well Hole Depth Units: | Not Reported | | |

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

**7**
**SSW** | **CA WELLS** | **CADW60000025386**
**1/2 - 1 Mile**
**Lower**

| | | | |
|---|---|---|---|
| Objectid: | 25386 | Latitude: | 36.3139 |
| Longitude: | -119.7799 | Site code: | 363139N1197799W001 |
| State well numbe: | 18S20E35N001M | Local well name: | ’’ |
| Well use id: | 6 | Well use descrip: | Unknown |
| County id: | 16 | County name: | Kings |
| Basin code: | ’5-22.12’ | Basin desc: | Tulare Lake |
| Dwr region id: | 80237 | Dwr region: | South Central Region Office |
| Site id: | CADW60000025386 | | |

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**8**
**ESE** | **CA WELLS** | **CADW60000002383**
**1/2 - 1 Mile**
**Higher**

| | | | |
|---|---|---|---|
| Objectid: | 2383 | Latitude: | 36.3194 |
| Longitude: | -119.761 | Site code: | 363194N1197610W001 |
| State well numbe: | 18S20E36M001M | Local well name: | ’18S20E36M001M’ |
| Well use id: | 6 | Well use descrip: | Unknown |
| County id: | 16 | County name: | Kings |
| Basin code: | ’5-22.12’ | Basin desc: | Tulare Lake |
| Dwr region id: | 80237 | Dwr region: | South Central Region Office |
| Site id: | CADW60000002383 | | |

Map ID
Direction
Distance | Database | EDR ID Number

**1**
**SW** | **OIL_GAS** | **CAOG11000277705**
**0 - 1/8 Mile**

| | | | |
|---|---|---|---|
| Districtnu: | 5 | Apinumber: | 03100583 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | Y | Wellstatus: | P |
| Operatorna: | Richard S. Rheem, Operator | Countyname: | Kings |
| Fieldname: | Any Field | Areaname: | Any Area |
| Section: | 35 | Township: | 18S |
| Range: | 20E | Basemeridi: | MD |
| Elevation: | 243 KB | Locationde: | Fr NW cor 1650 Sly 990 Ely |
| Gissourcec: | hud | Comments: | Not Reported |
| Leasename: | Kreyenhagen | Wellnumber: | 23-35 |
| Epawell: | N | Hydraulica: | N |
| Confidenti: | N | Spuddate: | 18-MAR-64 |
| Welldeptha: | 9090 | Redrillfoo: | 0 |
| Abandonedd: | 28-MAR-64 | Completion: | Not Reported |
| Directiona: | Unknown | Gissymbol: | PDH |
| Site id: | CAOG11000277705 | | |

**2**
**SSE** | **OIL_GAS** | **CAOG11000278271**
**1/2 - 1 Mile**

| | | | |
|---|---|---|---|
| Districtnu: | 5 | Apinumber: | 03120206 |
| Blmwell: | N | Redrillcan: | Not Reported |
| Dryhole: | Y | Wellstatus: | P |
| Operatorna: | Seaward Resources Inc. | Countyname: | Kings |
| Fieldname: | Any Field | Areaname: | Any Area |
| Section: | 1 | Township: | 19S |
| Range: | 20E | Basemeridi: | MD |
| Elevation: | Not Reported | Locationde: | Fr SW cor 660 Nly 660 Ely |
| Gissourcec: | hud | Comments: | Not Reported |
| Leasename: | Myrick | Wellnumber: | 1-1 |
| Epawell: | N | Hydraulica: | N |
| Confidenti: | N | Spuddate: | 12-FEB-81 |
| Welldeptha: | 9500 | Redrillfoo: | 0 |
| Abandonedd: | 28-FEB-81 | Completion: | Not Reported |
| Directiona: | Unknown | Gissymbol: | PDH |
| Site id: | CAOG11000278271 | | |

# GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
# RADON

**AREA RADON INFORMATION**

State Database: CA Radon

Radon Test Results

| Zipcode | Num Tests | > 4 pCi/L |
|---|---|---|
| 93245 | 8 | 1 |

Federal EPA Radon Zone for KINGS County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

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Federal Area Radon Information for Zip Code: 93245

Number of sites tested: 4

| Area | Average Activity | % <4 pCi/L | % 4-20 pCi/L | % >20 pCi/L |
|---|---|---|---|---|
| Living Area - 1st Floor | 0.775 pCi/L | 100% | 0% | 0% |
| Living Area - 2nd Floor | Not Reported | Not Reported | Not Reported | Not Reported |
| Basement | Not Reported | Not Reported | Not Reported | Not Reported |

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

## TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

## HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

## HYDROGEOLOGIC INFORMATION

AQUIFLOW$^{R}$ Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

## GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

**LOCAL / REGIONAL WATER AGENCY RECORDS**

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

**OTHER STATE DATABASE INFORMATION**

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

California Earthquake Fault Lines
Source: California Division of Mines and Geology
The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

RADON

State Database: CA Radon
Source: Department of Public Health
Telephone: 916-210-8558
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

# PHYSICAL SETTING SOURCE RECORDS SEARCHED

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

**STREET AND ADDRESS INFORMATION**

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# APPENDIX D: QUALIFICATIONS

PARTNER

**Sheryl A. Amezcua**
**Project Scientist**

## Education

Majored in English and Psychology, Point Loma Nazarene University, Point Loma, California

## Highlights

10 years in the property management and building construction field
7 years in the environmental engineering industry
Phase I Environmental Site Assessments
Environmental Desktop Reports
Construction Progress Monitoring

## Experience Summary

Ms. Amezcua has seven years of experience in the environmental industry and is a project scientist at Partner Engineering and Science, Inc. She has significant experience providing due diligence assessments for a variety of property types and exceeding the needs and requirements for a diverse number of reporting standards, including ASTM standards, EPA's All Appropriate Inquiry (AAI), and customized client formats for Phase I Environmental Site Assessments, Transaction Screen Assessments, Environmental Desktop Reports, Peer Reviews and Construction Progress Monitoring.

Ms. Amezcua has served as a project manager on jobs involving large development sites, dairies, gasoline stations, two local college districts, agricultural packing houses, trucking facilities, commercial, office, industrial, towing yards and agricultural properties of various kinds cataloging the presence of hazardous materials or petroleum products and has completed hundreds of complex historical industrial/commercial assessments throughout the Central Valley of California.

Ms. Amezcua has experience gathering historical research pertaining to each site, encompassing; review of historical aerial photographs, reverse street directories, building permits, planning records, topographical maps, Sanborn fire insurance maps, department of oil and gas maps, title information, geology and hydrology, soil type, groundwater depth, regulatory research, fire departments, state environmental agencies, federal environmental agencies, interviews and document review. Ms. Amezcua has led radon testing for apartment complexes, collected lead based paint and asbestos samples and made recommendations based on the findings. Ms. Amezcua also interviews tenants, owners, state/local regulators, and reviewed provided reports, as well as, formulating and crafting effective, persuasive arguments for conclusions reached utilizing multiple historical and current resources to document findings.

## Project Experience

*Highway 99 South, Selma, California-Proposed Hotel Property.* The subject property at the time of the assessment was observed to be a vacant graded parcel of land that was being assessed for the construction of a prospective hotel site. Review of historical aerial photographs identified a 1950s use that appeared to be a former travel trailer and camping site. Consultations with State and local regulatory agency records and interviews with persons knowledgeable of the site did not identify any known past uses of the property. Based on the inherent potential for onsite fueling due to the convenient location near to Highway 99, a Phase II recommendation was made for a geophysical survey that ultimately discovered previously unknown underground storage tanks (USTs) onsite. Analytical soil sampling and the removal of the USTs was conducted with the results returning non-detect for constituents of concern. The culmination of the two assessments conducted on the property indicated no further assessment was necessary.

*P Street Property Downtown Fresno, California.* A review of a regulatory agency data indicated a potential environmental concern. The subject property at the time of the assessment consisted of a vacant warehouse and a parking lot totaling 2.66 acres. Review of the City of Fresno Fire Department (CFFD) historical records identified the presence of a former 1,000-gallon fuel underground storage tank (UST) that was permitted on January 17, 1949. Subsequent documents indicate the removal and or abandonment of the UST in 1967. An inspection report dated in 1967 indicated an assessment utilizing a metal detecting instrument that did not find the former UST. No additional records pertaining to the UST were identified on file with the State or local regulatory agencies consulted during the course of the assessment. Based on the reported absence of the UST on the subject property during the metal detection investigation in 1967 and subsequent redevelopment of the subject property it was determined that the UST had most likely been removed. However, based on the absence of soil sampling and analysis during the tank removal activities or subsequent subsurface investigations of the UST, the UST was considered a recognized environmental condition. A Phase II subsurface investigation was conducted that identified three areas of subsurface anomalies that appeared to be a compilation of metallic objects rather than one singular object. Soil samples were tested by a State certified analytical laboratory that returned non-detect for constituents of concern in the former UST location that was identified in the CFFD records. The culmination of the two assessments conducted on the property indicated no further assessment was necessary.

*Musco Olive Company Property.* The assessment was comprised of review of several State and local regulatory agency data that indicated a number of potential environmental concerns. The subject property was observed to be occupied by Musco Olive Products Co. (Musco), as a commercial olive production facility with a 332,256 square foot building on 309 acres. Onsite operations consist of the storage, curing, brining, rinsing and canning of olives. Other subject property features include evaporation and irrigation ponds, and saline extraction forage crops. The site is regulated by the California Regional Water Quality Control Board (RWQCB), for surface impoundments which receive concentrated process water and spent lye solutions and the less concentrated process water system which is aerated and utilized to irrigate approximately 200+ acres of forage crop. Several onsite monitoring wells are monitored by the RWQCB for alkalinity, TSD, sodium, chloride, manganese and bicarbonate. A review of the RWQCB records indicated substantial compliance with the regulatory agency requirements. The site formerly operated four USTs that were reported in local regulatory agency records absent any indications of the specific use. Upon review of the records and interviews with the site contact, the USTs were identified as exclusively for the storage of vinegar and were determined as not a concern or an *REC*. Partner identified a California Division of Oil, Gas, and Geothermal Resources (DOGGR) Maps plugged oil well associated with the subject property abandoned October of 1993. According to the site contact, the injection well was not intended to be a gas or oil exploration well, but that the deep well was to be utilized to dispose of process water to the subsurface but that the ground was too dense to receive large amounts of water so the project was abandoned. Based on the review of the records, site observations and interviews with the site contact no recognized environmental concerns were identified and no further assessment appeared to be necessary.

*Large Dairy Operation, Bakersfield, California.* The subject property at the time of the assessment was utilized as a 320+ acre dairy and an agriculturally cultivated property. Consultations with State and local regulatory agency records, regulatory database review and interviews with persons knowledgeable of the site did not identify any initial concerns associated with the property. No *RECs* were identified at the time of the assessment, however large capacity fueling, equipment repairing and the storage of hazardous substances with staining on unpaved ground surfaces were identified onsite constituting an environmental

concern. It was determined that the farming practices appeared to be in substantial compliance with the regulatory agencies and a recommendation for secondary containment and removal of the stained soils was made. The result of the assessment of the property indicated no further assessment was necessary.

*Restaurant Site/Historical Gasoline Station, Lodi California.* The subject property at the time of the assessment was occupied by a fast food restaurant on a single parcel of land of 0.88 acres located to the west of State Route 99. No environmental concerns were identified during the review of State regulatory agency or the database report. However, a review of historical aerial photographs and the City of Lodi Building Department (CLBD) records identified a gasoline service station operated on the subject property from 1965 to 1986 with four 6,000-gallon gasoline underground storage tanks (USTs). No additional records related to the former gasoline service station including UST removals and/or subsurface investigations were found on file with the State or local regulatory agencies consulted during the course of this assessment. Experience with historical gasoline service stations indicates that full services which include fueling and automotive service/repair were commonly conducted with little to no regulatory oversight. These operations commonly utilize petroleum products, solvents, and other hazardous materials are commonly stored and utilized. Based on the historical presence of a gasoline service station on the subject property for at least 20 years coupled with the absence of previous subsurface investigations and UST removal documentation, the historical gasoline service station operations on the subject property was considered an REC. A Phase II ESA confirmed the removal of the former subsurface features and six soil borings returned non-detect for constituents of concern. The culmination of the two assessments conducted on the property indicated no further assessment was necessary.

## Contact

samezcua@partneresi.com

**Joel Redding**
**Project Manager**

## Education
B.A. Geography, California State University Fresno

## Training
OSHA 24-Hour Health and Safety Training

## Highlights
11 years of experience in environmental consulting
Phase I Environmental Site Assessments (ESAs)
Environmental Transaction Screens

## Experience Summary
Mr. Redding serves as a Project Manager for Partner Engineering and Science, Inc. (Partner), overseeing and managing all aspects of multi-scope projects including Phase I ESAs in accordance with EPA's All Appropriate Inquiry (AAI), Property Condition Assessments (PCAs), Zoning Reports, and Seismic Assessments.

Mr. Redding has over eleven years of project experience in the environmental consulting industry. Mr. Redding is familiar with all aspects of Due Diligence Property Assessments and the needs and requirements of a varied number of reporting standards, including ASTM E1527-13, EPA's All Appropriate Inquiry (AAI), The U.S. Small Business Administration (SBA), and customized client formats and scopes. Mr. Redding has performed and supervised over 1,000 ESAs and customized environmental assessments of a variety of properties including multi-family residential, hospitality, commercial office buildings, shopping centers, multi-tenant commercial complexes, industrial warehouses, manufacturing facilities, dry cleaning plants, gasoline service stations, automotive repair and body shops, medical facilities, food processing facilities, and agricultural properties.

## Project Experience
*Junior College Campus and Historical Military and Medical Hospital, Modesto, CA.* Mr. Redding prepared a Phase I ESA on a junior college campus in Modesto, the site of a historical World War II era military hospital and subsequent State-run hospital. Multiple recognized environmental conditions (RECs) were identified related to current and historical uses including vehicle and facilities maintenance, underground and aboveground fueling facilities, domestic wastewater treatment systems and septic systems, and asbestos and lead-based paint issues.

*2,500-Acre Agricultural Property, Maricopa, CA.* Mr. Redding prepared a Phase I ESA on a large agricultural property within an active oil and gas production area. Multiple RECs were identified related to oil and gas well development, oil and gas production, subsurface oil and gas pipelines, aboveground fuel storage, and agricultural chemical use, storage, and application.

*Printed Circuit Board Manufacturing Facility, Redwood City, CA.* Mr. Redding prepared a Phase I ESA on a printed circuit board manufacturing facility. Multiple RECs were identified related to electroplating, etching, silk screening, chemical storage, and hazardous waste generation, storage, and treatment operations.

*10-Site Residential Portfolio, Central CA.* Managed a multi-million dollar acquisition project consisting of Phase ESAs of ten, large-acreage, rural agricultural properties throughout Central California for a residential developer. Duties included managing, performing, and reviewing Phase I ESAs.

*25-Site Grocery Chain Portfolio, OR and CA.* Managed a multi-million dollar rehabilitation financing project consisting of Phase I ESAs of 25 grocery store properties throughout the State of Oregon and Northern California. Duties included managing, performing, and reviewing Phase I ESAs.

*16-Site Multi-Family Residential Portfolio, FL.* Managed a multi-million dollar acquisition project consisting of 16, multi-story apartment buildings in Florida. Duties included managing and reviewing Phase I ESAs.

## Contact

jredding@partneresi.com

PARTNER

**Cody Taylor**
**Principal**
**National Client Manager**

## Education

B.A., Environmental Analysis and Criminal Justice, University of California Irvine

## Trainings

ASTM Technical and Professional Training
Hazardous Materials Management Certificate Courses, University of California Irvine

## Highlights

25 years of experience in Real Estate Due Diligence/Consulting and Site Development Engineering
Prepared over 10,000 Phase I Environmental Site Assessments
Managed over 20,000 Phase I Environmental Site Assessments
Managed over 1,000 Phase II Subsurface Soil/Groundwater and Soil Gas Investigations, Asbestos, Lead, and Radon Screenings
Managed Several Class-A Equity Property Condition Assessments with Specialized Inspections, Seismic Evaluations, ALTA Surveys, Zoning, ADA Surveys and Pest Inspections
Managed Several Civil Engineering/Geotechnical Investigations of Commercial Development Projects, Construction Doc and Cost Reviews, Construction Progress Monitoring, and Energy Benchmarking

## Experience Summary

Mr. Taylor is a Principal and National Client Manager with significant experience in commercial real estate due diligence and site development engineering throughout the United States with specialized geographical experience in California and the Pacific West/Northwest. His responsibilities include full-phase site development and environmental consulting, national client management, multi-scope contract negotiation/execution, portfolio project management, and technical report quality control. Mr. Taylor's regional and national expertise compliments the wide variety of Partner projects and client types including national and local lending institutions, asset management/investment groups, commercial/retail developers, and commercial real estate professionals.

Mr. Taylor has 25 years of experience in national commercial real estate due diligence consulting including Phase I Environmental Site Assessments, Phase II Subsurface Soil/Soil Gas Investigations, Property Condition Assessments, Seismic Evaluations, Asbestos, Lead-Paint, and Radon Surveys, ALTA Surveys, Geotechnical Investigations, Civil Engineering, MEP Special Inspections, Energy Evaluations, and Construction Monitoring.

Mr. Taylor has assessed/managed over 20,000 commercial real estate transactions throughout his professional career including several multi-million dollar asset portfolios consisting of a 29-site commercial office property acquisition, two 1,200-site cellular tower transactions, a 215-site regional shopping center vacancy evaluation, a 25-site regional grocery-store chain environmental/survey evaluation, a 16-site multi-family apartment building acquisition, a 10-site residential development acquisition, and 5-site Class A multi-specialized-scope building acquisition inspection. These transactions have included some or all of Partner's core engineering due diligence services described above. Mr. Taylor routinely manages national asset/developer clients to evaluate the environmental and structural risks associated with commercial/industrial properties prior to acquisition. These risks may be associated with past hazardous materials use (i.e., gasoline stations, dry cleaners) which require historical research combined with subsurface evaluations to assess for contamination that could devaluate the property or create a human

health concern to occupants or construction workers; evaluate for asbestos, lead-based paint, and radon to determine the need for abatement or venting systems; evaluate the structural integrity of the building and assess for seismic retrofit; evaluate the roof, mechanical, electrical, plumbing systems (i.e., elevators, HVAC systems, sewer); evaluate for American Disabilities Act (ADA) deficiencies (i.e., ramps, railings, access); survey the property boundaries (i.e., ALTA Surveys); evaluate the subsurface conditions for construction suitability (i.e., Geotechnical Investigations); Civil Engineering/Design, and energy studies of the site building to meet with current requirements and systems efficiencies.

## Project Experience

*National Quick-Serve Restaurant Chains.* Multiple National Quick-Serve Restaurant (QSR) Chain development projects (ongoing) which include Phase I Environmental Site Assessments, Asbestos Surveys, Geotechnical Investigations, ALTA Surveys, and Civil Design. Mr. Taylor manages/assists several QSR and commercial development companies with their site development due diligence engineering assessments. These projects require multiple scope management and coordination with architects, municipalities, water purveyors, and construction design/contractor entities. Mr. Taylor's due diligence engineering experience as well as Partner's responsiveness and expertise in national commercial real estate development engineering create successful developments and client satisfaction on an ongoing basis.

*Large Residential Development.* A $50 million dollar residential development project including a Phase I Environmental Site Assessment, Phase II Subsurface Investigation, Site Remediation Investigation with State Regulatory Oversight, and a Civil Design (geotechnical investigations, surveys, grading design, civil plan, and permitting). Multiple engineering professionals completed state-directed remedial investigations and construction civil design for the large-scale residential development. The project required significant management/collaboration with the client and the state for completion. The development was successful and exemplified Mr. Taylor's due diligence engineering experience as well as Partner's responsiveness and expertise in commercial real estate evaluation and regulatory compliance.

*247-Unit Multi-Family Acquisition.* A $42 million dollar acquisition project consisting of 53 multi-family residential buildings which included a Phase I Environmental Site Assessment, Property Condition Assessment, Seismic Evaluation, ALTA Survey, Zoning, and termite/pest inspections. Multiple engineering professionals were coordinated and dispatched to the project site including two pest inspecting contractors to complete due diligence assessments and cost studies associated with the acquisition. The acquisition was successful and exemplified Mr. Taylor's due diligence engineering experience as well as Partner's responsiveness and expertise in commercial real estate evaluation.

*Beverly Hills Country Club Renovation.* A $12 million dollar renovation project which included a Phase I Environmental Site Assessment, Property Condition Assessment, Seismic Evaluation, ADA Survey, ALTA Survey and a comprehensive roof assessment. Multiple engineering professionals were coordinated and dispatched to the project site to complete due diligence assessments and cost studies associated with the planned renovation of the historic facility. The renovation was successful and exemplified Mr. Taylor's due diligence engineering experience as well as Partner's responsiveness and expertise in commercial real estate evaluation.

*Philadelphia Commercial Office Portfolio.* A $186 million dollar acquisition project consisting of 29, multi-story commercial office buildings and included Phase I Environmental Site Assessments and Property

Condition Assessments with special inspections of HVAC systems, elevators, and roofing systems. Multiple inspectors were coordinated and dispatched to each site within a two-week report completion timeline. Special inspection findings and related repair costs were cross-calculated with generalist inspection reporting and incorporated into the Property Condition Assessment spreadsheets for client/lender review. The acquisition was successful and exemplified Mr. Taylor's project management and negotiation skills, coordination of several in-house engineering professionals and subcontracted elevator consultants as well as Partner's responsiveness and expertise of client/lender's expedited timeline.

*National Cellular Tower Portfolios.* Two multi-million dollar acquisition projects consisting of over 2,400 cellular towers located throughout the United States which included Phase I Environmental Site Assessments. Multiple national inspectors were dispatched to each mountain-top tower within each state. The inspections incorporated the use of guides and four-wheel drive vehicles (primarily Jeeps) to visually inspect each tower. The acquisition project was successful and exemplified Mr. Taylor's project management skills, coordination of dozens of national inspectors, quality control reviews, and responsiveness to client's timeline.

*Oregon Grocery Chain Portfolio.* A multi-million dollar rehabilitation financing project consisting of 25 grocery store properties throughout the State of Oregon and included Phase I Environmental Site Assessments and ALTA Surveys. Multiple inspectors were dispatched to each site within a two-week turnaround. The financing project was successful and the project exemplified Mr. Taylor's negotiation/client management skills, coordination of inspections, quality control and completion of timely reports as well as the responsiveness and professional acumen of Partner's Engineering Team.

## Affiliations

ASTM Member No. 000216930
Environmental Bankers Association
Risk Management Association, Director, Fresno, CA
Northwest Environmental Business Council

## Speaking

*"Commercial Due Diligence 101", Northwest Environmental Business Council, Northwest Environmental Conference and Tradeshow, Portland, OR.* Commercial Real Estate Risks and Assessments

*"Regulations in Lending", Risk Management Association, Fresno, CA.* Risk Tolerance and Environmental Regulation for Commercial Bankers

*"Water in the Central Valley", Risk Management Association, Fresno, CA.* Contaminated Sites and Environmental Remediation of Commercial Properties

## Contact

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# APPENDIX G

# SB 610 WATER SUPPLY ASSESSMENT

## Lacey Ranch Area Master Plan

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November 2021

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# INTRODUCTION AND BACKGROUND

This Water Supply Assessment (WSA) has been prepared pursuant to the requirements of Senate Bill 610 (Costa; Chapter 643, Stats. 2001) ("SB 610"), which requires public water agencies, parties or purveyors that may supply water to certain proposed development projects to prepare a WSA for use in environmental documentation for such projects, pursuant to the California Environmental Quality Act (CEQA) (Pub. Resources Code § 21000, *et seq*.). The City of Lemoore is conducting an environmental review under the requirements of CEQA for the proposed Lacey Ranch Area Master Plan Project (Project) in the City of Lemoore, California. See Section 2.0 for a description of the Project.

The WSA will evaluate whether the total water supply determined to be available during normal, single dry and multiple dry years will meet the water demand associated with the Project, in addition to existing and planned future uses in the City.

This WSA contains information from the City of Lemoore 2015 Urban Water Management Plan (2015 UWMP); from more recent water use information from the City of Lemoore Water Master Plan (2020 WMP) which was adopted by the City in August 2021; as well as the Tulare Lake Subbasin Groundwater Sustainability Plan (January 2020). Other source documents were used to support the analysis and are cited as applicable within this document.

A WSA is required for any "project" that is subject to CEQA and proposes, among other things, a residential development of more than 500 dwelling units. Therefore, since the Lacey Ranch Area Master Plan Project is proposing a development of up to 825 dwelling units, a WSA is required.

***Water Agencies and Providers***

The City of Lemoore is within the boundaries of the South Fork Kings Groundwater Sustainability Agency (South Fork GSA). The Project is proposed for annexation into the City of Lemoore. Upon annexation, the Project area would be added to the City's water service area.

The City produces all its water supply through pumping groundwater using City facilities and does not purchase water from any other source. There are no current plans to purchase wholesale water in the near future. Thus, the City does not:

- Purchase or import water;
- Use surface water;
- Reuse stormwater, wastewater, or recycled water;

- Desalinate water; or
- Enter into water exchanges or transfers.

Therefore, the discussion in this WSA focuses on groundwater as the City's only existing water supply.

***Water System***

The City provides water distribution to approximately 26,000 residents, industrial and commercial users. The water distribution system consists of approximately 115 miles of active water pipelines, ranging from 1 to 18 inches, 10 active wells, 5 storage tanks and 4 pump stations.[1] See Section 3.0 – Project Water Supply Sources for more information.

[1] City of Lemoore – 2020 Water Master Plan, page 1-1.

# 1.0 PROJECT DESCRIPTION

## PROJECT LOCATION AND SETTING

The proposed Project is located on approximately 156 acres immediately north of the City of Lemoore in Kings County and is bounded by W. Lacey Blvd to the north and 18th Avenue to the west. The Project is on assessor parcel number 021-030-057-000. See Figure 1-1 – Regional Location, Figure 1-2 – Project Vicinity and Figure 1-3 – Site Aerial. The site lies within a portion of the NW quarter of Section 35, Township 18 South, Range 20 East, Mount Diablo Base and Meridian.

The proposed Project site is located in an area that is dominated by farmland / agricultural operations and scattered rural residential housing to the north, east and west, and residential development to the south. The site is partially designated by the City of Lemoore General Plan for future residential uses and is currently zoned as Limited Agricultural-10 District (AL-10) by Kings County. Approximately one-third of the site (the southern one-third) is within the City's Sphere of Influence (SOI) while the remaining two-thirds are currently outside the SOI. The entire site is proposed for annexation into the City limits of Lemoore. As of Spring 2021, the land is being farmed for alfalfa. Table 1-1 shows land uses and zoning designations of adjacent parcels surrounding the site.

**Table 1-1: Surrounding Land Use and Zoning**

| Location | Existing Land Use | Current Zoning Classification |
|---|---|---|
| **North** | Agriculture | AL-10 (Limited Agricultural-10 District) – County |
| **South** | Residential | Low Density Residential (RLD) - City |
| **West** | Agriculture/City Water tank and treatment facility | AL-10 (Limited Agricultural-10 District) – County / PR (Parks and Recreation/Ponding Basin) - City |
| **East** | Agriculture | AL-10 (Limited Agricultural-10 District) - County |

## DESCRIPTION OF PROPOSED PROJECT

The proposed Project includes the following components:

- Annex approximately 156 acres from Kings County into the City of Lemoore
- Approve a General Plan Amendment
- Approve a Zone Change
- Adopt the Lacey Ranch Area Master Plan through a Planned Unit Development
- Approve the Project's Tentative Tract Map
- Amend Sphere of Influence

Within the Lacey Ranch Area Master Plan, the Project Applicant is proposing to subdivide and develop approximately 156 acres of land into a planned residential community with a mix of single-family and multi-family housing units. The Project will be constructed in four phases, as outlined below. The exact numbers of each housing type may vary slightly, depending on final density. However, there will be a maximum of 825 housing units in total (see Figure 1-4: Site Plan). Specific housing types include:

- ±164 compact lots with an average lot size of 4,500 square feet
- ±310 medium lots with an average lot size of 6,500 square feet
- ±73 estate lots with an average lot size of 9,500 square feet
- ±145 multifamily units at 20 units per acre
- ±59 multifamily units at 12 units per acre

Table 1-2 depicts the proposed land use designations and zone districts of the proposed Project.

**Table 1-2: Proposed Land Use and Zoning Designations**

| Proposed Land Use | Proposed Land Use Designation | Proposed Zone District |
|---|---|---|
| Single Family lots | Low Density Residential | RLD – Low Density Residential |
| 12 unit per acre multifamily | Medium Density Residential | RMD – Medium Density Residential |
| 20 unit per acre multifamily | High Density Residential | RHD – High Density Residential |
| Parks | Parks/Recreation | PR – Parks/Recreation |
| Storm drainage basin | Greenway/Detention Basin | PR – Parks/Recreation |

**Figure 1-1 - Regional Location**

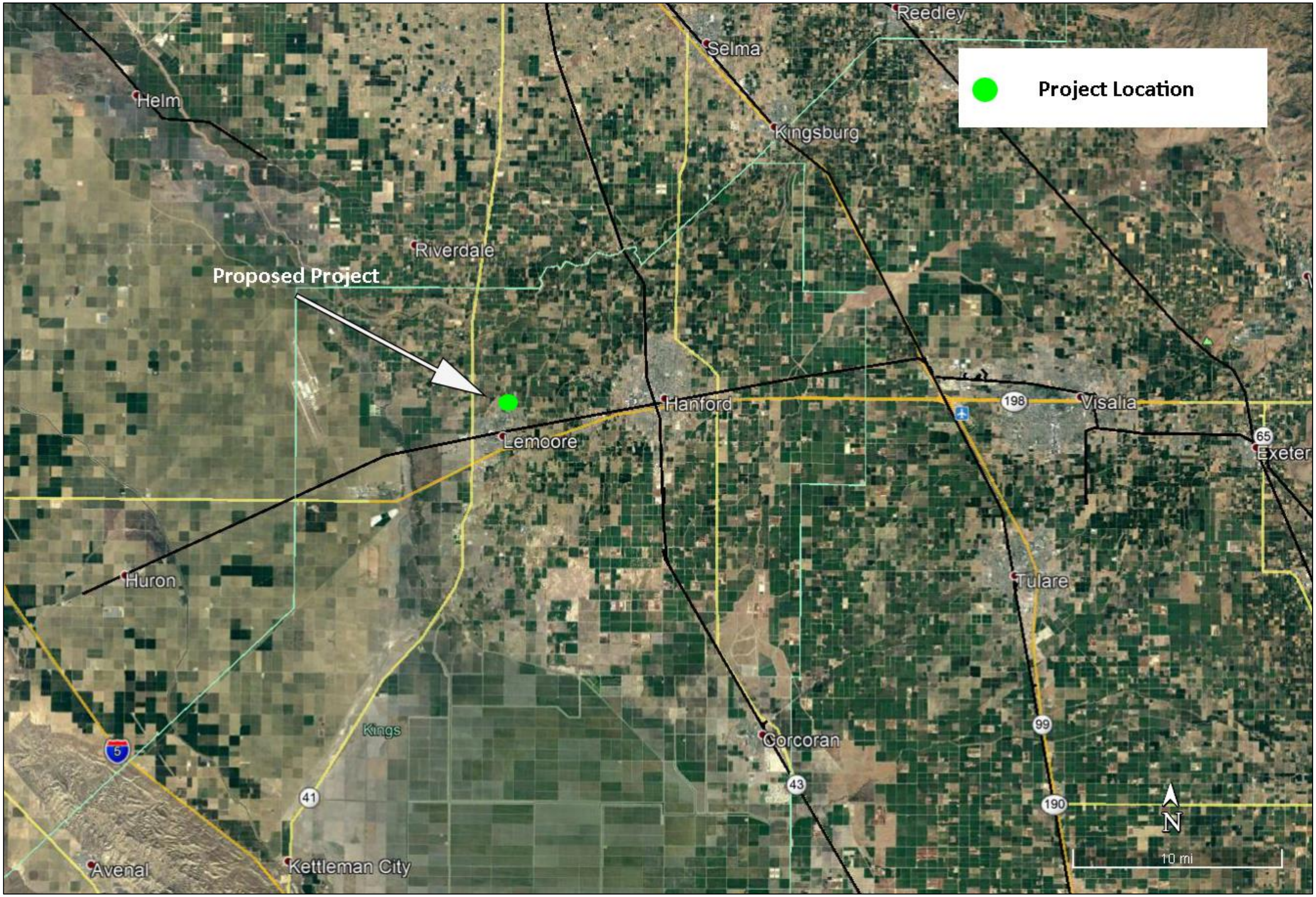


**Figure 1-2 - Project Vicinity**

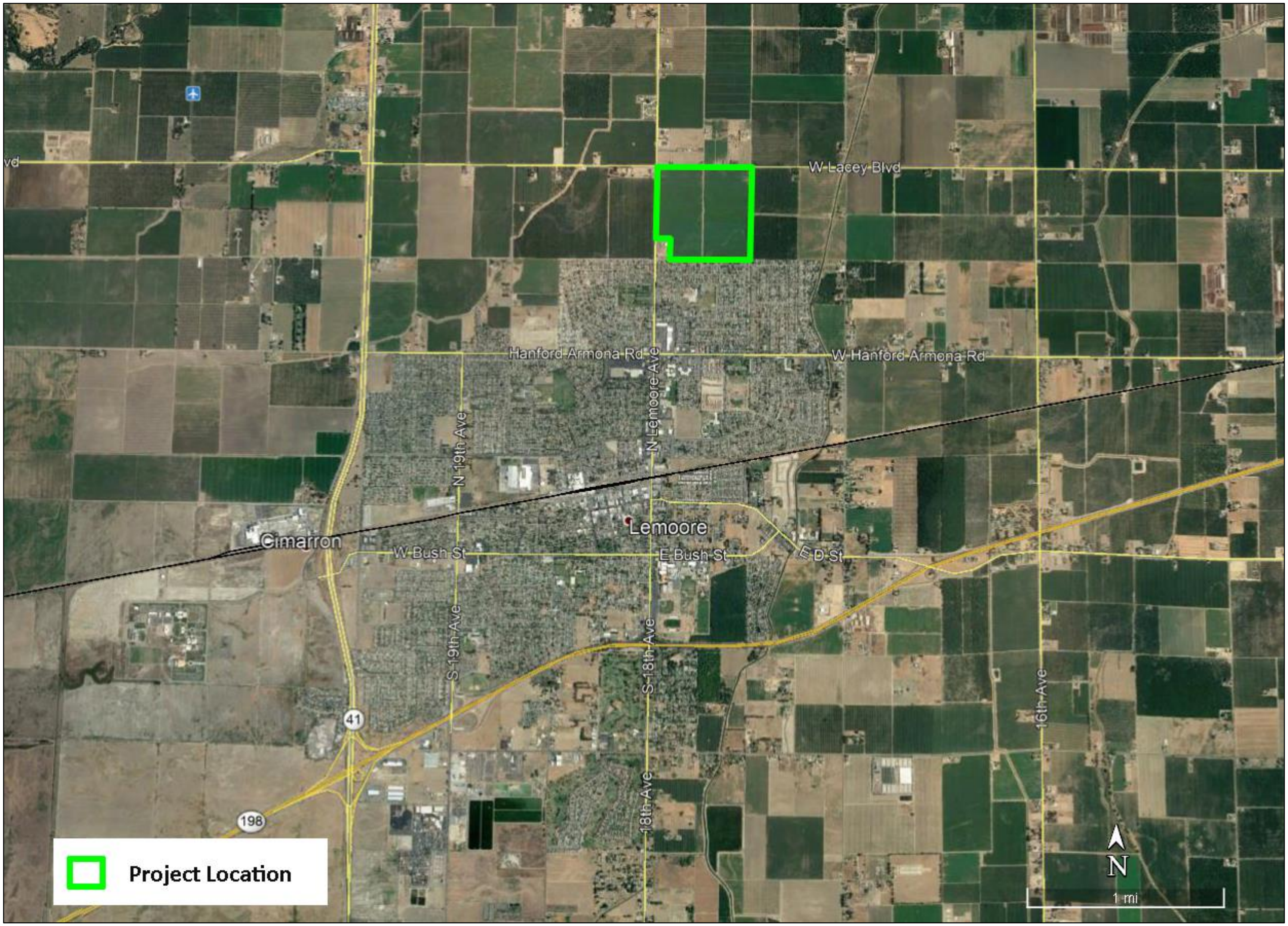


**Figure 1-3 - Site Aerial**

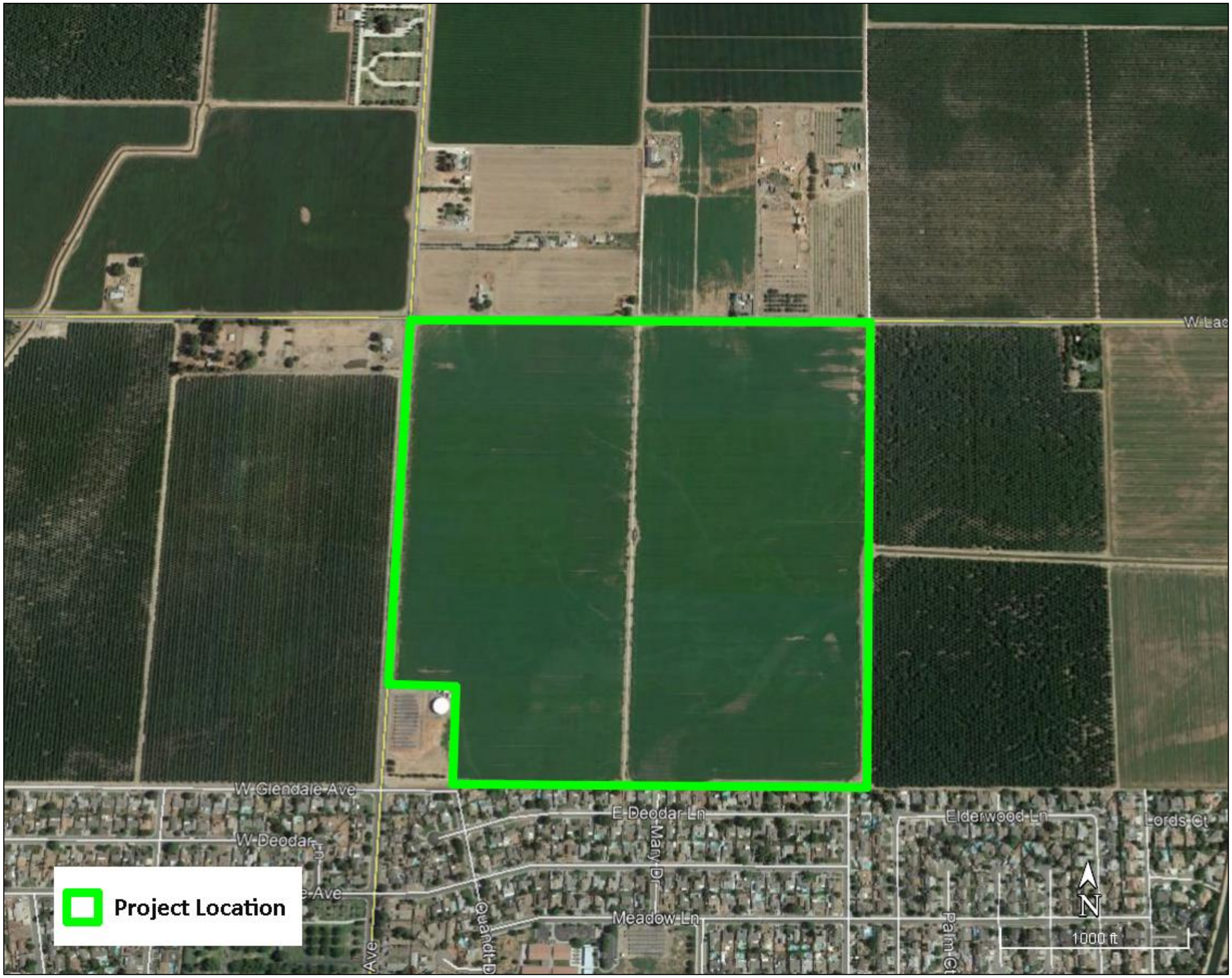
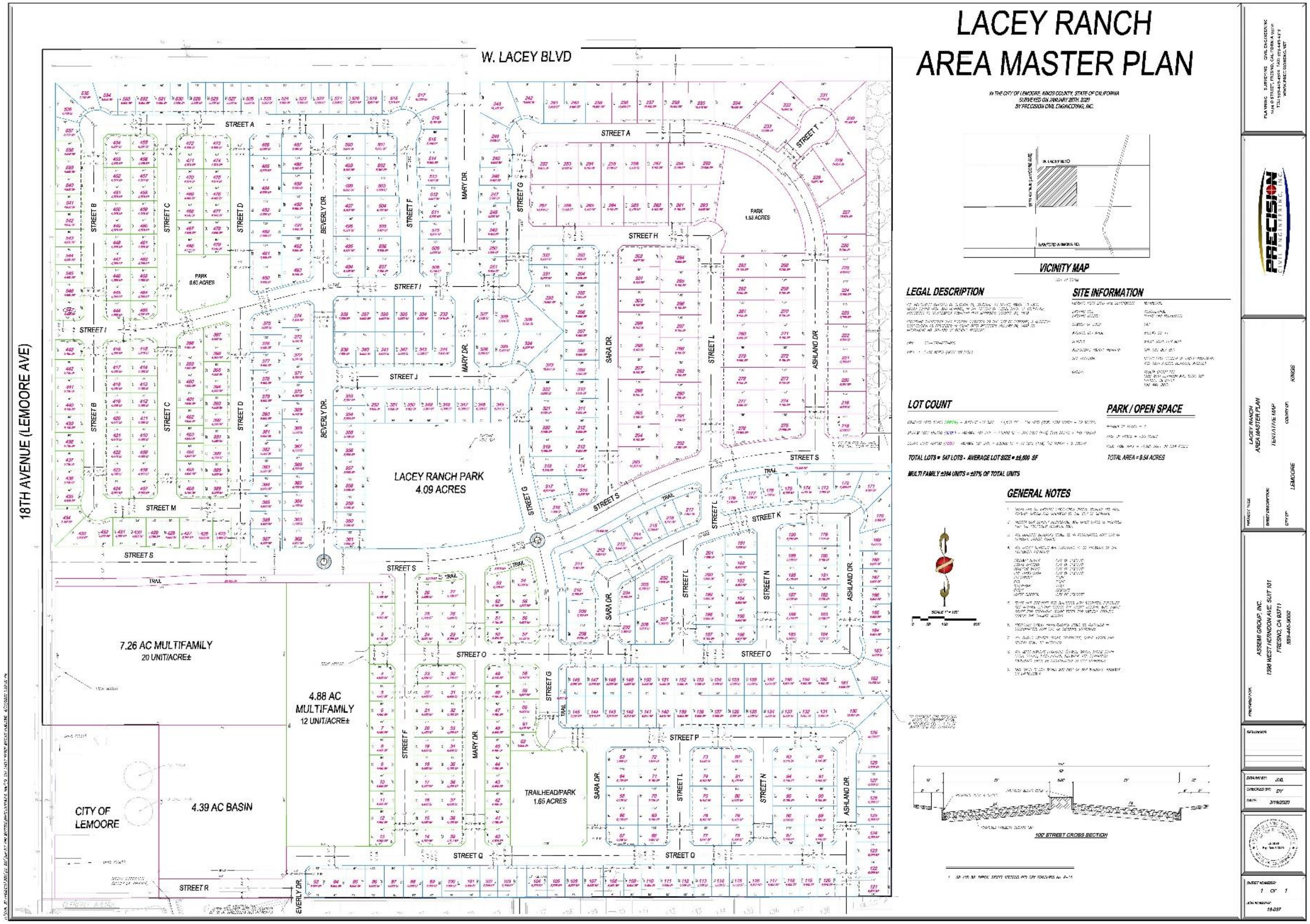


**Figure 1-4 - Site Plan**



*Parks and Open Space*

The Project includes a total of four parks for a total of 7.9 acres and 1.64 acres of trail area, as depicted on Figure 1-4: Site Plan. The 1.64 acres of trail area will be designated and zoned consistent with the designations and zoning of their adjacent parcels.

*Site Circulation and Access*

The site has been designed with seven points of ingress and egress. One of these points connects at W. Lacey Blvd along the northern edge of the Project; three access points connect at 18$^{th}$ Avenue on the western edge; two access points are along the southern edge; and one access point is along the eastern edge. The Project will be responsible for construction of internal roadways as well as for potential improvements to surrounding roadways to accommodate the Project.

*Infrastructure*

The Project includes the construction of a 4.39-acre storm drain basin and will require connection to various City-operated systems such as sewer, water and storm drain facilities. The Project will be responsible for construction of connection points to the City's existing infrastructure. The Project also includes improvements and landscaping along the frontage roads and within the site itself.

The Project will require a 50-foot-wide easement for irrigation water to Lemoore Canal & Irrigation District Co. as the canal along a portion of the western and southern boundary will be abandoned and relocated.

*Phasing / Construction Schedule*

Proposed Project construction will require site preparation activities such as demolition to remove the existing alfalfa crop and site grading activities. Construction is expected to occur over 16 years as determined by market demands and will be constructed over four phases, broken down as follows:

- Phase 1 – 125 single family lots and 90 multifamily lots
- Phase 2 – 125 single family lots and 100 multifamily lots
- Phase 3 – Dependent on market conditions
- Phase 4 – Dependent on market conditions

It is anticipated that the Project would begin development in 2022.

# 2.0 PROJECT WATER DEMANDS

## ASSUMPTIONS

Project water demand is estimated using information from the City's adopted 2015 Urban Water Management Plan (2015 UWMP), as well as from a more recent water use information from the City's Water Master Plan (2020 WMP) that was adopted by the City in August 2021. Project water demand is calculated on the following assumptions:

- Residential: The Project is proposing 825 residential units (see Table 1-2 for the breakdown of housing types).
- Public Parks / Public Areas / Landscaping: The Project includes approximately 9.54 acres of park space distributed among four parks and a trail throughout the proposed development. To be conservative, it is assumed that approximately eight (8) acres of the total park space acreage will have irrigated landscaping and will require approximately 3.5 acre-feet of water per acre per year, for a total of 28 afy. This figure is based on information pertaining to water requirements for irrigated urban landscaping in the region.[2]
- Per Capita Water Use: The City's "gallons per capita per day" (GPCD) has ranged from a high of 228 GPCD in 2004 to 124 GPCD in 2016.[3] The reduction in per capita demand can be attributed to increased conservation by the City's customers, as well as additional conservation associated with recent drought conditions. The City's 2015 UWMP identifies a target of 175 GPCD for Year 2020.[4] However, based on more recent information from the City's 2020 WMP, a demand of 171 GPCD was used to project future flow projections in the City.[5] This value was chosen because it is based on more recent historical usage in the City. The 171 GPCD is inclusive of water used for outdoor landscaping.
- Household Size: According to the City's General Plan, the City averages 3.1 persons per household. Although some of the housing products / floor plans proposed by the Project would likely result in fewer than 3.1 persons per residence, the figure is being used to conservatively estimate Project water demand.

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[2] https://www.ppic.org/publication/groundwater-and-urban-growth-in-the-san-joaquin-valley/ (accessed Oct. 2021).

[3] City of Lemoore – Water Master Plan (Feb. 2020), page 103.

[4] City of Lemoore – Urban Water Management Plan (2015), page 31, table 5-1.

[5] City of Lemoore – Water Master Plan (Feb. 2020), page 4-4.

## PROJECT WATER DEMANDS

Based on the above assumptions, Project water demand is calculated as follows:

| | |
|---|---|
| Residential: | 825 dwelling units X 3.1 persons per dwelling unit = 2,558 persons X 171 GPCD = 437,418 total gallons per day X 365 days per year = 159,657,570 gallons per year (or ~**490 afy**) |
| Parks/Public Landscaping: | 8 acres X 3.5 afy = ~**28 afy** |
| Total Water Demand: | 490 afy for Residential<br>28 afy for Parks<br>**518 afy** |

Based on these assumptions, the Project would require approximately **518 afy** of water. The section below outlines applicable measures to reduce potable water use.

## MEASURES TO REDUCE POTABLE WATER USE

As identified above, the proposed Project would require approximately 518 afy of water based on the calculations broadly applicable to residential developments. The Project is subject to water use reduction methods as follows:

1. The Project is subject to the Model Water Efficient Landscape Ordinance (MWELO) which encourages more efficient irrigation systems, onsite stormwater capture, limiting turf, etc.
2. In addition, California's Title 20 Water Efficiency Standards are applicable to the Project. These standards include:
    i. Toilets and urinals: Toilets must have a maximum water use of 1.28 gallons per flush and urinals are limited to 0.125 gallons or less per flush.
    ii. Residential lavatory faucets: Maximum flow can't exceed 1.2 gallons per minute.
    iii. Kitchen faucets: Maximum flow rate is 1.8 gallons per minute.
    iv. Shower devices: Maximum flow rate is 1.8 gallons per minute.

These measures will help reduce Project-related demand for potable water.

In addition, The City of Lemoore is part of the South Fork Kings Groundwater Sustainability Agency (South Fork GSA), which is under the purview of the Tulare Lake Subbasin Groundwater Sustainability Plan. According to the Sustainability Plan, the following projects and management actions were chosen for the South Fork GSA:

| Project | Annualized Benefit (AF/Y) | Priority |
|---|---|---|
| Groundwater Measurement and Report | 1,500 | High |
| Surface Water Delivery Improvement | 5,000 | High |
| On-Farm Improvements | 2,500 | Medium |
| Conservation Reuse | 1,000 | Medium |
| Cropping/Fallowing Program | 13,000 | High |
| **Demand Reduction Sub-Total** | **23,000** | |
| Aquifer Storage and Recovery | 13,000 | High |
| Surface Storage | 2,000 | Low |
| Mid-Kings Recharge Basin | 7,000 | Medium |
| **Supply Enhancement Sub-Total** | **22,000** | |
| **Total** | **45,000** | |

The City of Lemoore, as a member of the South Fork GSA, will work with the GSA to implement the projects and management actions identified by the GSA. Upon Project approval and annexation into the City of Lemoore, the Project will be subject to the requirements of the Sustainability Plan of the South Fork GSA.

## COMPARISON TO “NO-PROJECT” / EXISTING WATER DEMANDS

The 155-acre site has been actively farmed with alfalfa hay for at least the past five years. Of the 155-acres, approximately 154 acres are used for growing with approximately 1 acre used for dirt access roads. Alfalfa requires at least 4 acre-feet per year per acre in the San Joaquin Valley of

California.[6] Based on 154 acres of alfalfa production, the site uses approximately 616 AF of water per year (154 acres X 4 AFY = 616 AFY). Compared to the proposed Project water demand of 518 AFY, the existing alfalfa production uses approximately 98 AFY more water per year than the proposed Project. It should be noted that the proposed Project site is currently irrigated from on-site agricultural wells and none of the existing agricultural water use on the site is from the City's water system. Once approved, the Project will require connection to the City's water system and will not utilize the existing agricultural wells. This information is being provided to show how the proposed Project water demand compares to the existing water demand on the site. However, water for the proposed Project would ultimately come from the City's water system.

[6] https://alfalfa.ucdavis.edu/irrigatedalfalfa/pdfs/ucalfalfa8287prodsystems_free.pdf, page 12 (accessed Oct. 2021).

# 3.0 PROJECT WATER SUPPLY SOURCES

This section provides an overview of water supply sources for the City of Lemoore. The City produces all of its water supply through pumping groundwater using City facilities. The City does not purchase or import water from water suppliers or other entities.[7]

*Water Code Section 10910 (f)(1) – Inclusion in Urban Water Management Plan*

The proposed Lacey Ranch Project site is currently adjacent to the City limits of Lemoore and is proposed for annexation into the City. Upon annexation, the site will be included within the City's potable water service boundaries and will be subject to the City's most recently adopted Urban Water Management Plan. The Project's estimated increase in population (2,558 residents) was included within the future population projections of the City's 2015 Urban Water Management Plan (2015 UWMP). See Section 5.0 – Inclusion in Adopted Urban Water Management Plan for more information.

*Water Code Section 10910(f)(2) - Description of Groundwater Basin*

The groundwater subbasin underlying the City of Lemoore is the Tulare Lake Subbasin (Groundwater Basin No. 5-022.12). The Tulare Lake Subbasin is one of eight subbasins within the Tulare Lake Hydrologic Region that transport, filter, and store water. The major rivers in the Subbasin that provide most of the surface water runoff for the Region is the Kings River. The Tulare Lake Subbasin is a non-adjudicated basin, meaning there are no restrictions on groundwater pumping.

Of the 5.1 million acres of the San Joaquin Valley Basin, the Tulare Lake Subbasin has a surface area of approximately 524 thousand acres (818 square miles). The Tulare Lake Subbasin is bounded on the south by the Kings-Kern county line, on the west by the California Aqueduct, the eastern boundary of Westside Groundwater Subbasin, and Tertiary marine sediments of the Kettleman Hills. It is bounded on the north by the southern boundary of the Kings Groundwater Subbasin, and on the east by the westerly boundaries of the Kaweah and Tule Groundwater Subbasins. The southern half of the Tulare Lake Subbasin consists of lands in the former Tulare Lake bed in Kings County. The San Joaquin River Groundwater Basin is not an adjudicated groundwater basin.[8]

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[7] City of Lemoore 2015 UWMP, page 32.

[8] City of Lemoore 2015 UWMP, page 33.

The Tulare Lake Subbasin Groundwater Sustainability Plan (Groundwater Sustainability Plan) (January 2020) provided historical information related to groundwater in the Subbasin. The Subbasin groundwater model and Department of Water Resources (DWR) estimates were used to calculate groundwater in storage for the principal aquifers within the Subbasin boundaries based on 2016 conditions. The unconfined aquifer has an average specific yield of 8.5% and an average saturated thickness of 451 feet over the 535,869 acres of the Subbasin. This yields an estimated 20.5 million AF of groundwater in storage in the unconfined aquifer. The confined aquifer has an estimated average specific yield of 4.91% and an average saturated thickness of 2,294 feet over the 535,869 acres of the Subbasin. This yields an estimated 60.4 million AF of groundwater in storage in the confined aquifer zone. Total estimated groundwater in storage as of 2016 is approximately 80.9 million AF, which is slightly less than the DWR estimate of 82.5 million AF.[9]

According to the Groundwater Sustainability Plan, the estimated groundwater in storage in the Subbasin above the base of fresh groundwater is roughly 82.5 million AF while groundwater use in the Subbasin is in overdraft by an average of roughly 0.07 million AF/Y. Although the reductions in groundwater storage will be addressed through the Groundwater Sustainability Plan implementation period, the long-term regional overdraft could continue for many years without significant risk to the beneficial uses and users of groundwater in the Subbasin.[10]

The Groundwater Sustainability Plan also indicated that for the areas covered by the South Fork Kings Groundwater Sustainability Agency (includes the City of Lemoore), the average annual storage change for this area is estimated at a negative 37,840 AF.

*Water Code Sections 10910(f)(3) and (4) – Description and Analysis of Amount and Location of Groundwater Pumped*

Based on the most recent information available in the City's 2015 UWMP, the amount of groundwater pumped by the City from years 2011 – 2015 is shown below.[11]

| Year | Groundwater Volume Pumped |
|---|---|
| 2011 | 2,289 AF |
| 2012 | 2,471 AF |

[9] Tulare Lake Subbasin Groundwater Sustainability Plan (Jan. 2020), page 3-30.
[10] Ibid, page 4-13.
[11] City of Lemoore – 2015 UWMP, page 37, table 6-1.

| | |
|---|---|
| 2013 | 2,579 AF |
| 2014 | 2,422 AF |
| 2015 | 2,076 AF |

Additional information is provided below from the 2020 WMP regarding historical groundwater use in the City and is shown in gallons per capita per day (GPCD). The figures used for years 2017 – 2020 are based on the baseline average of 171 GPCD identified in the City's 2020 WMP.[12]

| Year | Per Capita Demand |
|---|---|
| 2011 | 166 GPCD |
| 2012 | 174 GPCD |
| 2013 | 191 GPCD |
| 2014 | 157 GPCD |
| 2015 | 128 GPCD |
| 2016 | 124 GPCD |
| 2017 | 171 GPCD* |
| 2018 | 171 GPCD* |
| 2019 | 171 GPCD* |
| 2020 | 171 GPCD* |

*indicates baseline average

The City provides water distribution to approximately 26,000 residents, industrial and commercial users. The water distribution system consists of approximately 115 miles of active water pipelines, ranging from 1 to 18 inches, 10 active wells, 5 storage tanks and 4 pump stations.[13]

The City's existing groundwater wells and capacity are summarized as follows:[14]

| Well Name | Current Status | Well Capacity (GPM) |
|---|---|---|
| Well 2 | Inactive | -- |
| Well 3 | Abandoned | -- |
| Well 4 | Active | 1,850 |
| Well 5 | Active | 1,850 |
| Well 6 | Active | 1,100 |
| Well 7 | Active | 1,200 |
| Well 8 | Abandoned | -- |
| Well 9 | Emergency | 1,200 |
| Well 10 | Seasonal | 2,000 |

[12] City of Lemoore - 2020 Water Master Plan, page 4-5, table 4.3.

[13] Ibid, page 1-1.

[14] Ibid, page 3-1.

| | | |
|---|---|---|
| Well 11 | Active | 800 |
| Well 12 | Backup | 1,150 |
| Well 13 | Active | 1,000 |
| Well 14 | Active | 1,000 |
| | **Total:** | **13,150** |

Based on the capacity of the existing wells, the City is capable of producing of up to 6,912 MG per year (13,150 GPM @ 24 hours/day X 365 days per year = 6,912 MG).

Refer also to Section 7.0 – Water Supply Rights and Entitlements; Historic Water Usage for more information from the City's 2015 UWMP.

*Water Code Section 10910(f)(5) – Analysis of the Sufficiency of the Groundwater from the Basin from which the Proposed Project will be Supplied to Meet Projected Water Demand Associated with the Project.*

Please refer to Section 4.0 – Comparison of Project Demand to Water Supply Sources for the analysis under Water Code Section 10910(f)(5).

# 4.0 COMPARISON OF PROJECT DEMAND TO WATER SUPPLY SOURCES

As discussed herein, the sole source of water for the City is through groundwater pumping. The 2015 UWMP indicates there are 17.1 million AF to a depth of 300 feet and 82.5 million AF to the base of fresh groundwater within the Tulare Lake Subbasin. However, the City's groundwater wells are located within the boundary of the City and much of the groundwater located in the Subbasin is not accessible to the City. Using the acreage of the existing City and a conservative estimate of 100 vertical feet of groundwater as the volume of groundwater accessible to City wells at various depths, it was calculated that the existing groundwater water supply available to the City is 178,228 million gallons (MG). It should be noted that the City has not yet determined a safe yield, but it is assumed in the 2015 UWMP that the projected groundwater supply through year 2040 is also 178,228 MG. The 2015 UWMP's projections of reasonably available water are as follows: [15]

| Year | Reasonably Available Volume |
|---|---|
| 2020 | 178,228 MG |
| 2025 | 178,228 MG |
| 2030 | 178,228 MG |
| 2035 | 178,228 MG |
| 2040 | 178,228 MG |

It should be noted that the 178,228 MG is the estimated total volume of groundwater that is available. However, based on the City's existing water infrastructure, the City is capable of producing up to 6,912 MG per year (13,150 GPM @ 24 hours/day X 365 days per year = 6,912 MG).

The City's 2015 UWMP assumed a City growth rate of 3.1% and provided population projections that were used for the 2015 UWMP's analysis as follows:

| Year | 2015 UWMP Population Assumptions |
|---|---|
| 2020 | 29,804 |
| 2025 | 34,719 |
| 2030 | 40,445 |
| 2035 | 47,115 |
| 2040 | 54,885 |

More recent population projection information was provided in the City's Water Master Plan (2020 WMP). The Lacey Ranch Project was identified specifically in Figure 2.2 of the 2020 WMP

[15] City of Lemoore – 2015 Urban Water Management Plan, page 42.

as a "known future development" and was included in the 2020 WMP projections. The 2020 WMP provided the following population projections:

| Year | 2020 WMP Population Assumptions |
|---|---|
| 2020 | 27,089 |
| 2025 | 28,332 |
| 2030 | 29,633 |
| 2035 | 30,993 |
| 2040 | 32,416 |

The proposed Project would result in the development of up to 825 residential units. The City averages 3.1 persons per household, which could result in an increase of approximately 2,558 people at full Project buildout. Using the information from the 2020 WMP, the City's current population of 27,089 residents would be increased by approximately 9.5% to 29,647 from the Project alone. Table 4-1 shows the City's existing population (per the City's 2020 WMP), the increase in population from the proposed Project, and the City's 2020 WMP projected population in Year 2040. The last column shows the additional population that could be accommodated under the City's 2020 WMP even with full buildout of the proposed Project.

**Table 4-1: WMP Population Estimates**

| Year 2020 Population | Proposed Project Population | Existing Plus Project Population | WMP 2040 Projected Population | Additional Population That Could Be Accommodated Under the 2020 WMP Assuming Lacey Ranch Full Buildout |
|---|---|---|---|---|
| 27,089 | 2,558 | 29,647 | 32,416 | 2,769 |

While other future residential developments are also likely to occur in the City, it is likely that many of the newer residents would populate the Lacey Ranch Project, as it would provide a variety of housing needs (multi-family and single-family). The City's 2020 WMP anticipated a population of up to 32,416 people by 2040. Given the City's current population as identified in the 2020 WMP (27,089 persons), the City could accommodate the proposed Project plus an additional 2,769 persons according to the underlying assumptions of the City's 2020 WMP. The 2015 UWMP assumed a much larger population in 2040 of 54,885. Under that scenario, the City could accommodate another 25,238 people (in addition to Year 2020 population + Lacey Ranch population). Based on this information, it is reasonable to assume that the Project is within the

population growth projections (and associated water availability) identified in both the City's 2015 UWMP and the City's 2020 WMP.

As previously stated, the Project would require 518 AF (or approximately 169 MG) of water per year from the City's water system. The City can produce up to approximately 6,912 MG per year of potable water. The projected 2040 demand in the City is 4,830 MG, leaving a difference of 2,082 MG. At 169 MG, the Project would account for approximately 8.1% of the projected 2040 demand in the City. Since the City's 2015 UWMP has projected sufficient reasonably available volumes of water and because the Project is within the population growth assumptions (and associated water availability) identified in both the City's 2015 UWMP and 2020 WMP, there is sufficient water to serve the Project.

The City's General Plan provides policies related to annexation of agricultural properties. Specifically, General Plan Policy PU-I-10 states the following: "Require that developers of agricultural land to be annexed to the City offer the water rights associated with this land to the City." The Project Applicant currently has 100 water shares (equivalent to 150 AFY) that are subject to this Policy.

## 5.0 INCLUSION IN ADOPTED URBAN WATER MANAGEMENT PLAN (Water Code Section 10910(C)(1))

The proposed Lacey Ranch Project site is currently adjacent to the City limits of Lemoore and is proposed for annexation into the City. Upon annexation, the site will be included within the City's potable water service boundaries and will be subject to the City's most recently adopted Urban Water Management Plan. The Project's estimated increase in population (2,558 residents) was included within the population projections of the City's 2015 Urban Water Management Plan (2015 UWMP). Pages 10 through 15 of the 2015 UWMP show the location and population projection estimates that were assumed in the 2015 UWMP.

**The following pages are extracted directly from the adopted 2015 UWMP (Pages 10 through 15) in satisfaction of Water Code Sections 10910(A)(1) and 10910(D)(2)).**

# SECTION 3 - SYSTEM DESCRIPTION

## 3.1 - Service Area

*10631(a). Describe the service area of the supplier.*

The City is located within the northern portion of Kings County, in the center of the San Joaquin Valley, approximately 200 miles north of Los Angeles and 210 miles south of San Francisco. The City is situated at the junction of State Highway (SR) 198 and SR-41 (Figure 3-1). The City is surrounded by agricultural development, with smaller parcels north and east of the community and large holdings west and south. A major economic factor in the community's economy is Lemoore Naval Air Station located west of the City. The City of Lemoore's water system serves the incorporated area of the City (see Figure 3-2).

## 3.2 - System

The City does not sell water to any other agencies nor to any water users outside the City limits. Information about the water system comes from the *2030 Lemoore General Plan Draft Environmental Impact Report* (City of Lemoore, 2007).

The City currently utilizes local groundwater as its sole source of municipal water supply. The City's municipal water system extracts its water supply from underground aquifers via six active groundwater wells within the City limits (see Figure 3-3) and two in a wellfield approximately 5 miles north of the City. Water is conveyed from the wells to the consumers via a distribution system with pipe sizes between 6 and 16 inches in diameter. The City maintains four ground-level storage reservoirs within the distribution system, with a total capacity of 4.4 million gallons (MG). The City's main water distribution plant is located along G Street west of Lemoore Avenue. In addition to the main domestic water supply, the City operates a separate system to supply industrial water to the Olam tomato processing plant. The two water systems can be connected in case of an emergency such as a major fire or natural disaster.

## 3.3 - Climate

*10631(a). Describe the climate of the service area of the supplier.*

The climate of the Lemoore area is characteristic of that of the Southern San Joaquin Valley. The summer climate is hot and dry, while winters are cool and periodically humid. Mean daily maximum temperatures range from a low of approximately 40 degrees Fahrenheit ($^0$F) in February to a high of about 96$^0$F in August. Rainfall is concentrated during the six months from October to May. December and January typically experience heavy fog, mostly nocturnal, caused when moist cool air is trapped in the valley by high pressure systems. In

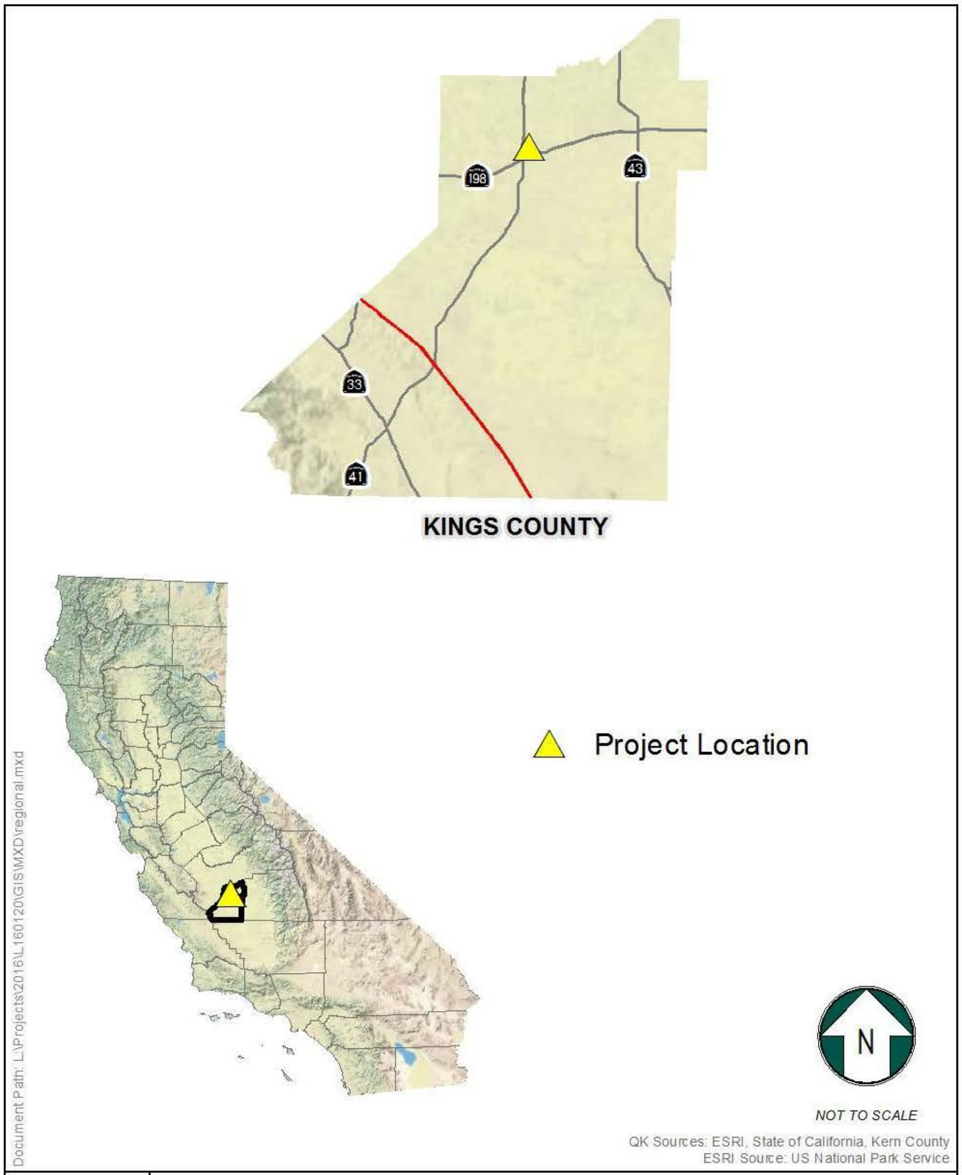


**Figure 3-1**
**Regional Area**

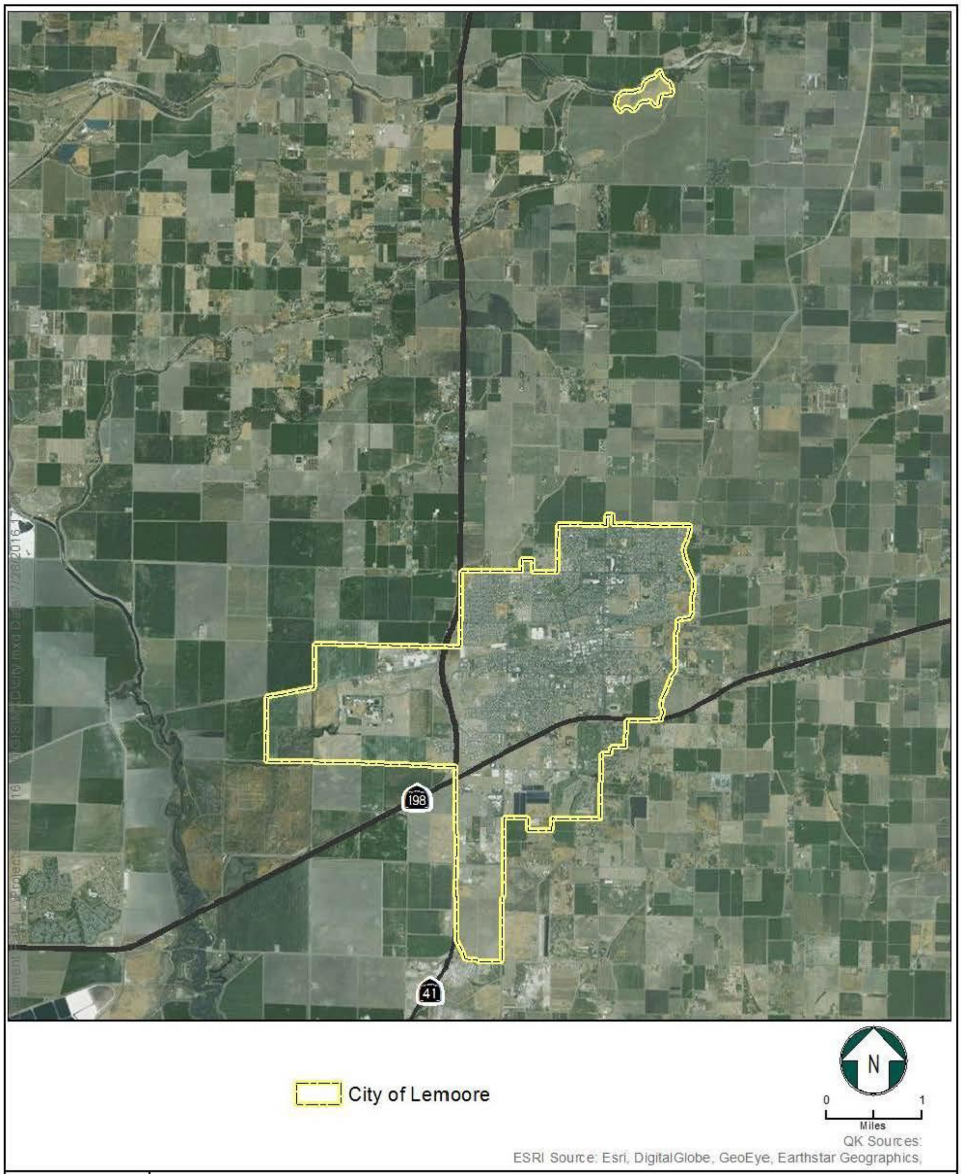


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**Figure 3-2**
**City Limits**

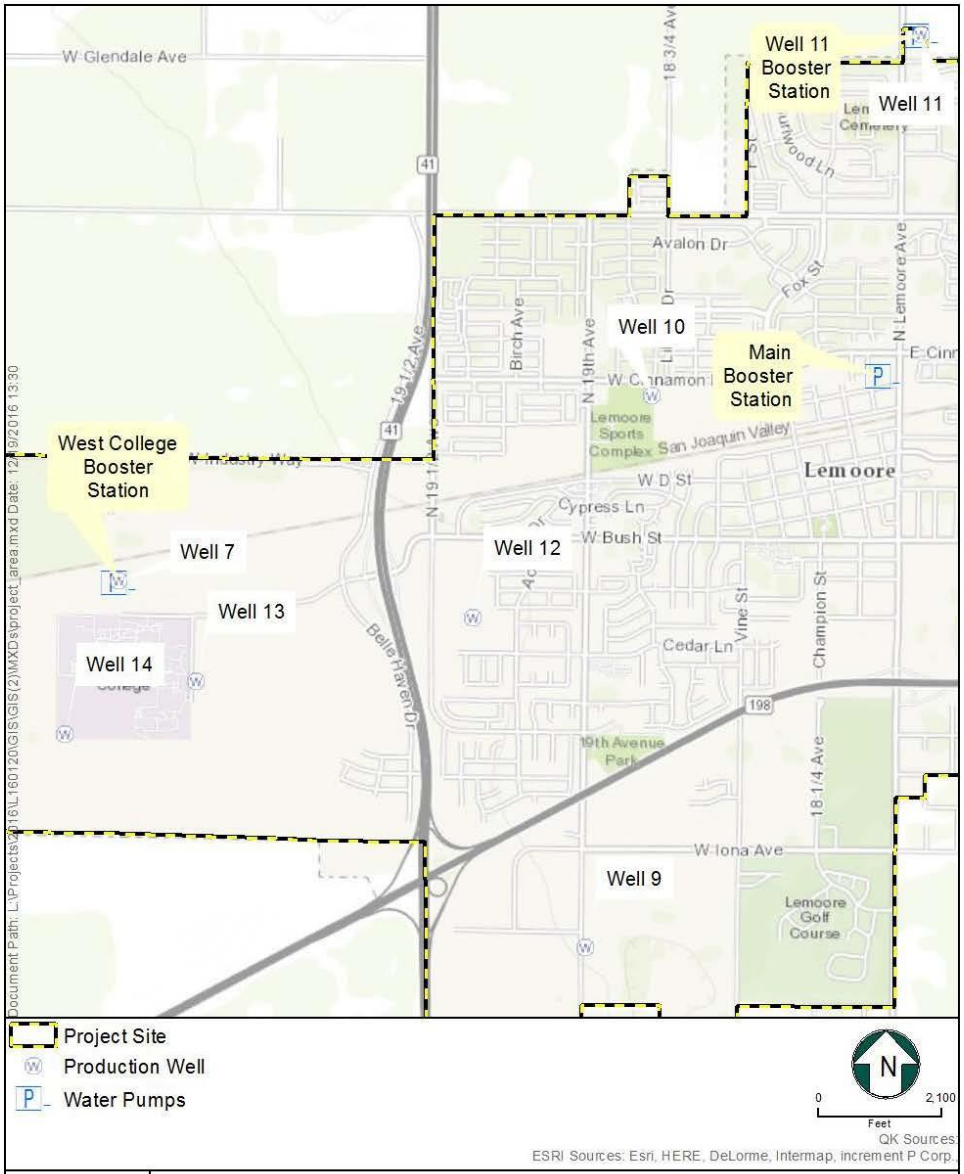



**Figure 3-3**
**Well Locations**

extreme cases, this fog may last continuously for two or three weeks. Its depth is usually less than 3,000 feet.

The Valley area is subject to characteristic seasonal air flows. During the summer, air currents from the Pacific Ocean enter the Valley through the San Francisco Bay and Delta region and are forced down the valley. These air movements are primarily to the southeast at velocities of 6 to 10 miles per hour (mph). During the winter, cold air flowing off the surrounding mountains results in currents toward the northwest and velocities ranging from 0 to 5 mph. These airflows result in extensive horizontal mixing of air masses in the Valley. However, vertical dispersion is constrained by temperature inversions, an increase in air temperature in a stable atmospheric layer, which may occur throughout the year.

Climatic data of the Lemoore area is summarized as follows:

**2015-2016 Stratford Station Climate Data**

| Month | Average Evapotranspiration (ETo) (inches) | Average Temperature (Fahrenheit) | Average Total Precipitation (inches) | Average Relative Humidity (%) |
|---|---|---|---|---|
| January | 1.30 | 49.4 | 2.43 | 85 |
| February | 2.80 | 53.5 | 0.04 | 75 |
| March | 4.37 | 58.2 | 0.62 | 66 |
| April | 6.23 | 64.5 | 0.69 | 51 |
| May | 7.86 | 70.6 | 0.60 | 48 |
| June | 9.67 | 80.3 | 0.00 | 33 |
| July | 8.72 | 82.9 | 0.03 | 41 |
| August | 8.42 | 80.6 | 0.00 | 40 |
| September | 6.57 | 76.3 | 0.00 | 36 |
| October | 4.36 | 69.2 | 0.40 | 52 |
| November | 2.33 | 49.1 | 0.61 | 67 |
| December | 1.47 | 44.1 | 1.20 | 78 |
| **2015 Annual** | **64.1** | **64.9** | **6.6** | **56** |

## 3.4 - Service Area Population and Demographics

*16031(a). Indicate the current population of the service area.*

*16031(a). Provide population projections for 2020, 2025, 2030, and 2035.*

Recognized as a community in 1873 the town was initially called Latache. In 1893 the small settlement was renamed Lemoore, and by the turn of the century, Lemoore reached a population of just less than 1,000 residents. Incorporated in July of 1900, the City prospered as a small agricultural service center.

Lemoore has experienced increases in population in every decade since 1970. Between 1970 and 1980 the population increased 109% reflecting the expansion of the Lemoore Naval Air Station and industrial development in northern Kings County.

Anticipating increased water demand from population growth is an important aspect of an UWMP. Lemoore's 2015 UWMP analyzes the effects of increased demand on water resources arising from sustained population growth, which will be important information for decision makers as they plan for the anticipated growth. Currently, the City Limits contain 1,059 acres of undeveloped land, with 4,371 acres already developed (City of Lemoore, 2012).

Per the California Department of Finance (DOF), the City's population in 2015, was 25,585. Table 3-1 shows the calculated population projection based on the 2030 General Plan's estimated 3.1% annual increase. These projections will be used as a basis for this Plan's analysis. (Continued expansion of Lemoore Naval Air Station, as a principal employer near the community, is assumed.)

**Table 3-1 Retail: Population - Current and Projected**

| Table 3-1 Retail: Population - Current and Projected | | | | | | |
|---|---|---|---|---|---|---|
| Population Served | 2015 | 2020 | 2025 | 2030 | 2035 | 2040*(opt)* |
| | 25,585 | 29,804 | 34,719 | 40,445 | 47,115 | 54,885 |
| NOTES: Based on California Department of Finance estimates and an annual projected growth rate of 3.1% | | | | | | |

## 3.5 - Other Demographic Factors

*16031(a). Describe other demographic factors affecting the supplier's water management planning.*

There are no unique or pertinent community demographic characteristics which will influence future population growth or water usage.

# 6.0 DRY YEAR WATER SUPPLY ADEQUACY (Water Code Section 10910(C)(4))

The following dry year water supply adequacy is excerpted from the adopted 2015 UWMP for the City-served area.

**The following pages are extracted directly from the adopted 2015 UWMP (Pages 43 through 48) in satisfaction of Water Code Sections 10910(A)(1) and 10910(D)(2)).**

# SECTION 7 - WATER SUPPLY RELIABILITY ASSESSMENT

*CWC 10634. The plan shall include information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments as described in subdivision (a) of Section 10631, and the manner in which water quality affects water management strategies and supply reliability.*

All UWMPs must include an assessment of the reliability of their water supplies. The water supply and demand assessment must compare the total projected water use with the projected water supply, in 5-year increments, through the next 20 years. This section presents a comparison of the water demands and supplies within the City's service area, and assesses supply versus demand during normal years, single dry water years, and multiple dry water years. This section describes the long-term reliability of Lemoore's water supply while *Section 8 – Water Shortage Contingency Planning* provides short-term reliability planning that may require immediate action, such as a drought or a catastrophic supply interruption.

## 7.1 - Constraints on Water Sources

*CWC 10631(c)(2). For any water source that may not be available at a consistent level of use, given specific legal, environmental, water quality, or climatic factors, describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.*

The City obtains 100% of its potable water supply from groundwater pumping. Regardless of climatic conditions, there is approximately 82.5 million AF of water to the base of fresh groundwater within the Tulare Lake Subbasin. Using the acreage of the existing City and a conservative estimate of 100 vertical feet of groundwater as the volume of groundwater accessible to City wells at various depths, it was calculated that the existing groundwater water supply available to the City is 178,228 MG (see Table 6-8). This water supply is available to the City regardless of the climatic conditions related to average, single-dry, and multiple-dry years.

However, because the City relies entirely on groundwater wells, the drawdown will be more severe in drought years and high mean temperature years. Since the entire central San Joaquin Valley has been experiencing severe drought conditions over the last four years, the groundwater drawdown may eventually reach a critical point particularly in depth of wells. Groundwater would still be available to the City over the UWMP planning horizon, but the need to deepen wells may become necessary in the future in the event of prolonged drought. The City has watering regulations in place to ensure water conservation and provide education to all customers. These regulations can be found on the City's website. Additionally, future SGMA regulations will mandate safe yields within the Tulare Lake Subbasin, which will further alleviate the possibility of requiring the deepening of wells in the future. Compliance with SGMA may require the City to come up with alternative sources of water in the future based on the result of the Groundwater Sustainability Plan to be

developed, but now the City can pump as much water as is required to supply the needs of the City.

From a water quality perspective, the City's water system includes six active groundwater wells within the City limits (see Figure 3-3) and two in a wellfield approximately 5 miles north of the City. The City produces an annual water quality report required by the California State Department of Health Services. The report summarizes the water quality sampling results for 2015 for all water customers. The data collected, though representative, is more than one-year-old with data that ranged from 2013 to 2015.

Based on the *2015 City of Lemoore Water Quality Consumer Confidence Report* (City of Lemoore, 2016), the City's water system recently failed a drinking water monitoring requirement. Prior to October 2013, Stage 1 compliance with the total trihalomethane (TTHM) maximum contaminant level (MCL) was based on a running annual average of four sample locations. The MCL for TTHMs is 0.080 mg/L. Testing results prior to Oct. 1, 2013 show that the system exceeded the TTHM MCL. As of October 2013, the Stage 2 Rule went into effect, in which compliance is based on a locational running annual average (LRAA), calculated individually for each sample site. The City is continuing to collect new data to determine compliance with the MCL using the LRAA. The City is currently running pilot testing at well site 7 to determine potential treatment processes that will lower the TTHM level of the water. During the transition period, the City remains in violation of the Stage 1 MCL until a Stage 2 MCL compliance determination can be made.

## 7.2 - Reliability by Type of Year

*CWC 10620(f). An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.*

*CWC 10631(c)(1). Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage, to the extent practicable, and provide data for each of the following:*

*(A) An average water year.*

*(B) A single-dry water year.*

*(C) Multiple-dry water years.*

There are two aspects of supply reliability that can be considered. The first relates to immediate service needs and is primarily a function of the availability and adequacy of the supply facilities. The second aspect is climate related, and involves the availability of water during mild or severe drought periods. This section compares water supplies and demands during three water scenarios: average or normal water year, single-dry water year, and multiple-dry water years. These scenarios are defined as follows:

- Average year – a year, or an averaged range of years, that most closely represents the median runoff levels and patterns. The supply quantities for this condition are derived from historical average yields. Within this document the terms "normal" and "average" are used interchangeably;
- Single-dry year – the year with the lowest water supply availability. Generally considered to be the lowest annual runoff for a watershed since the water-year beginning in 1903; and
- Multiple-dry years – the lowest average water supply availability to the agency for a consecutive multiple year period (three years or more). Generally considered to be the lowest average runoff for a consecutive multiple year period (three years or more) for a watershed since 1903.

Drought years for the hydrologic region can be determined by referencing DWR's Chronological Reconstructed Sacramento and San Joaquin Valley Water Year Hydrologic Classification Indices 1995 to 2015 (WSIHIST) (California Department of Water Resources, 2016). The City is currently experiencing a multiple dry year cycle, which started in 2012 and has continued through 2015. Within this multiple dry year period, the City still could meet all its water demands without the need to implement water management tools. Also, the impact of an extreme single dry year such as 2015 did not impact the ability of the City to meet all its water demands. Supply reliability for average water years such as 2010 and multiple and single dry years is shown in Table 7-1. The reliability of water service, which is subject to proper operation and maintenance of the City's water distribution system and its ability to deliver the water, is discussed in *Section 6 – System Supplies*.

**Table 7-1 Retail: Basis of Water Year Data**

| Table 7-1 Retail: Basis of Water Year Data | | | |
|---|---|---|---|
| Year Type | Base Year *If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000* | Available Supplies if Year Type Repeats | |
| | | ☐ Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location ______________ | |
| | | ☑ Quantification of available supplies is provided in this table as either volume only, percent only, or both. | |
| | | Volume Available | % of Average Supply |
| Average Year | 2010 | N/A | 100% |
| Single-Dry Year | 2015 | N/A | 100% |
| Multiple-Dry Years 1st Year | 2012 | N/A | 100% |
| Multiple-Dry Years 2nd Year | 2013 | N/A | 100% |
| Multiple-Dry Years 3rd Year | 2014 | N/A | 100% |
| Agency may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If an agency uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table. | | | |

Therefore, the City has a reliable water supply and is not vulnerable to seasonal and climatic shortages. There is no current need for plans to supplement or replace the existing groundwater source available to the City with alternative sources or water demand management measures.

## 7.3 - Supply and Demand Assessment

*10635(a). Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.*

### 7.3.1 - Average (or Normal) Year

Normal year supply and demand projections and differences are presented in Table 7-2.

**Table 7-2 Retail: Normal Year Supply and Demand Comparison**

| Table 7-2 Retail: Normal Year Supply and Demand Comparison | | | | | |
|---|---|---|---|---|---|
| | 2020 | 2025 | 2030 | 2035 | 2040 *(Opt)* |
| Supply totals *(autofill from Table 6-9)* | 178,228 | 178,228 | 178,228 | 178,228 | 178,228 |
| Demand totals *(autofill from Table 4-3)* | 2,324 | 2,745 | 3,351 | 3,830 | 4,530 |
| Difference | 175,904 | 175,483 | 174,877 | 174,398 | 173,698 |

As shown in Table 7-2, future water supplies are anticipated to not only meet, but far exceed demands in normal year conditions through year 2040.

### 7.3.2 - SINGLE DRY YEAR

Projected supplies were compared to the increased demands for a single-dry year and are presented in Table 7-3.

**Table 7-3 Retail: Single Dry Year Supply and Demand Comparison**

| Table 7-3 Retail: Single Dry Year Supply and Demand Comparison | | | | | |
|---|---|---|---|---|---|
| | 2020 | 2025 | 2030 | 2035 | 2040 (Opt) |
| Supply totals | 178,228 | 178,228 | 178,228 | 178,228 | 178,228 |
| Demand totals | 2,324 | 2,745 | 3,351 | 3,830 | 4,530 |
| Difference | 175,904 | 175,483 | 174,877 | 174,398 | 173,698 |

As shown in Table 7-3, anticipated groundwater supplies are sufficient to meet all demands through the year 2040 even under single-year drought conditions.

### 7.3.3 - MULTIPLE DRY YEARS

Projected supplies were compared to the increased demands for various multiple dry-year scenarios and are presented in Table 7-4.

**Table 7-4 Retail: Multiple Dry Yeas Supply and Demand Comparison**

| Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison | | | | | | |
|---|---|---|---|---|---|---|
| | | 2020 | 2025 | 2030 | 2035 | 2040 (Opt) |
| First year | Supply totals | 178,228 | 178,228 | 178,228 | 178,228 | 178,228 |
| | Demand totals | 2,324 | 2,745 | 3,351 | 3,830 | 4,530 |
| | Difference | 175,904 | 175,483 | 174,877 | 174,398 | 173,698 |
| Second year | Supply totals | 178,228 | 178,228 | 178,228 | 178,228 | 178,228 |
| | Demand totals | 2,324 | 2,745 | 3,351 | 3,830 | 4,530 |
| | Difference | 175,904 | 175,483 | 174,877 | 174,398 | 173,698 |
| Third year | Supply totals | 178,228 | 178,228 | 178,228 | 178,228 | 178,228 |
| | Demand totals | 2,324 | 2,745 | 3,351 | 3,830 | 4,530 |
| | Difference | 175,904 | 175,483 | 174,877 | 174,398 | 173,698 |
| Fourth year *(optional)* | Supply totals | 178,228 | 178,228 | 178,228 | 178,228 | 178,228 |
| | Demand totals | 2,324 | 2,745 | 3,351 | 3,830 | 4,530 |
| | Difference | 175,904 | 175,483 | 174,877 | 174,398 | 173,698 |
| Fifth year *(optional)* | Supply totals | 178,228 | 178,228 | 178,228 | 178,228 | 178,228 |
| | Demand totals | 2,324 | 2,745 | 3,351 | 3,830 | 4,530 |
| | Difference | 175,904 | 175,483 | 174,877 | 174,398 | 173,698 |
| Sixth year *(optional)* | Supply totals | 178,228 | 178,228 | 178,228 | 178,228 | 178,228 |
| | Demand totals | 2,324 | 2,745 | 3,351 | 3,830 | 4,530 |
| | Difference | 175,904 | 175,483 | 174,877 | 174,398 | 173,698 |

As shown in Table 7-4, anticipated groundwater supplies are sufficient to meet all demands through the year 2040 even under multiple-dry year drought conditions.

## 7.0 WATER SUPPLY RIGHTS AND ENTITLEMENTS; HISTORIC WATER USAGE (Water Code Section 10910(A)(1) and 10910(D)(2))

The City of Lemoore utilizes only groundwater for its potable water. The following pages are extracted directly from the adopted 2015 UWMP (Pages 32 through 42) in satisfaction of these Code sections. This information is applicable to the entire City of Lemoore municipal water service area.

**The following pages are extracted directly from the adopted 2015 UWMP (Pages 32 through 42) in satisfaction of Water Code Sections 10910(A)(1) and 10910(D)(2)).**

# SECTION 6 - SYSTEM SUPPLIES

*CWC 10631(b). Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a).*

This section describes and quantifies sources of water available to the City. As discussed in *Section 4 – System Water Use*, the City of Lemoore produces all its water supply through pumping groundwater using City facilities. The City does not purchase water from any other source. There are no current plans to purchase wholesale water in the near future. Thus, the City does not:

- Purchase or import water;
- Use surface water;
- Reuse stormwater, wastewater, or recycled water;
- Desalinate water; or
- Enter into water exchanges or transfers.

Therefore, the following discussion focuses on groundwater as the City's only existing water supply. This section also discusses future water projects and provides a summary of existing and planned sources of water.

## 6.1 - Purchased or Imported Water

The City does not purchase or import water from other water suppliers or other entities. There are no plans for the City to purchase or import water as part of its water supply.

## 6.2 - Groundwater

*CWC 10631(b). If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:*

*(1) A copy of any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management.*

*(2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For basins that a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.*

*(3) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.*

*(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.*

### 6.2.1 - BASIN DESCRIPTION

The groundwater subbasin underlying the City of Lemoore, and thus the service area, is the Tulare Lake Subbasin (Groundwater Basin No. 5-22.12). The Tulare Lake Subbasin is one of eight subbasins within the Tulare Lake Hydrologic Region that transport, filter, and store water (see Figure 6-1). The major rivers in the Subbasin that provide most of the surface water runoff for the Region is the Kings River.

Of the 5.1 million acres of the San Joaquin Valley Basin, the Tulare Lake Subbasin has a surface area of 524 thousand acres (818 square miles). The Tulare Lake Subbasin is bounded on the south by the Kings-Kern county line, on the west by the California Aqueduct, the eastern boundary of Westside Groundwater Subbasin, and Tertiary marine sediments of the Kettleman Hills. It is bounded on the north by the southern boundary of the Kings Groundwater Subbasin, and on the east by the westerly boundaries of the Kaweah and Tule Groundwater Subbasins. The southern half of the Tulare Lake Subbasin consists of lands in the former Tulare Lake bed in Kings County. (Department of Water Resources, 2006).

#### *Basin Levels and Storage*

Per Bulletin 118, the estimated water storage capacity of the Tulare Lake Subbasin is estimated to be 17.1 million acre-feet (AF) to a depth of 300 feet and 82.5 million AF to the base of fresh groundwater. The average subbasin water level was reported to decline nearly 17 feet from 1970 to 2000. The period from 1970 through 1978 showed moderate declines with many fluctuations, totaling about 12 feet. The 10-year period from 1978 to 1988 saw more fluctuations and a general increase of about 24 feet, bringing water levels up to 12 feet above the 1970 water levels. 1988 through 1993 showed steep declines, bottoming out in 1993 at 23 feet below 1970 water levels. Water levels rose from 1993 to 1999 to about 10 feet below the 1970 level. From 1999 to 2000, water levels dropped another 7 feet, bringing the water levels to about 17 feet below 1970 water levels. Fluctuations in water levels have been most exaggerated in the lakebed area of the Subbasin. This area has the steepest decreases in water levels as well as some of the strongest increases in water levels. (Department of Water Resources, 2006).

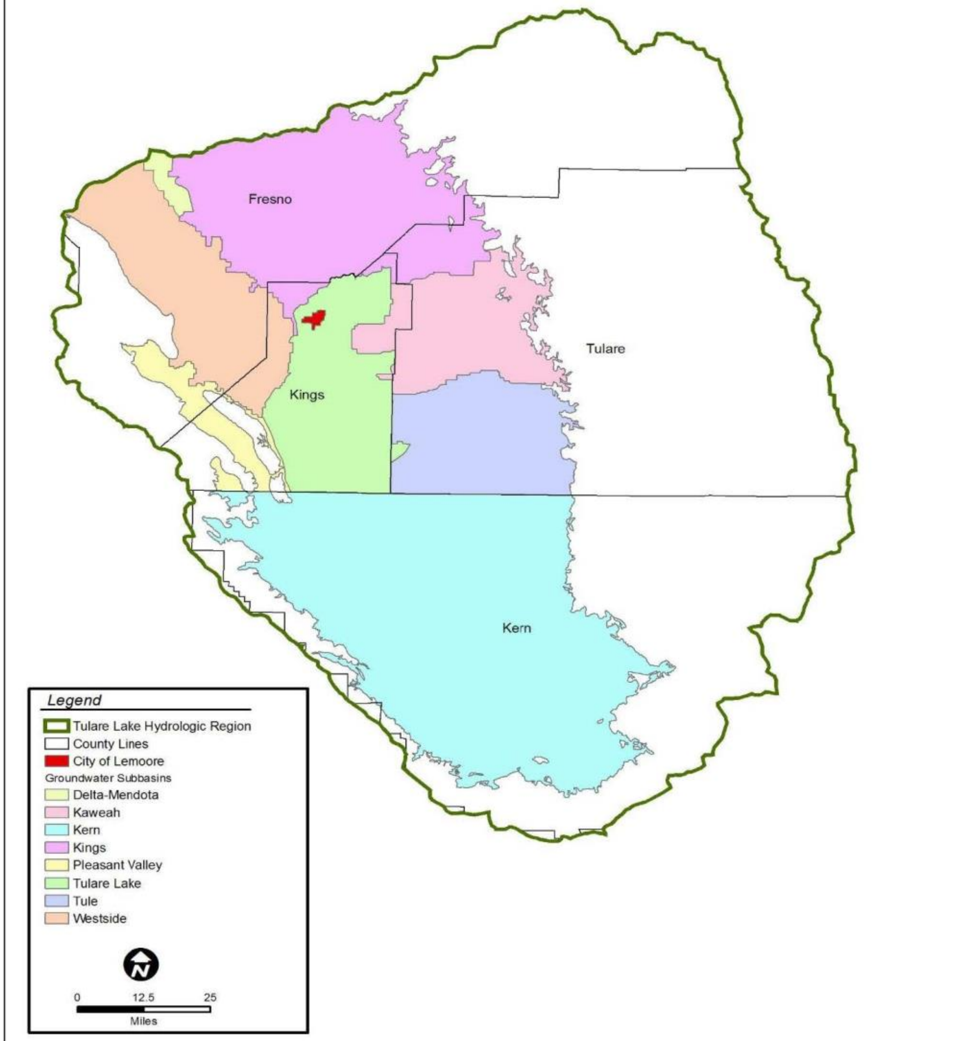



**Figure 6-1**
**Tulare Lake Hydrologic Region**

### Basin Water Quality

The water in this groundwater subbasin is generally a calcium bicarbonate type in the northern portion. This trends towards sodium bicarbonate as it approaches the Tulare Lakebed. Total dissolved solids (TDS) values typically range from 200 to 600 milligrams per liter (mg/L). TDS values of shallow groundwater in drainage problem areas are as high as 40,000 mg/L. The Department of Health Services, which monitors Title 22 water quality standards, reports TDS values in 36 wells ranging from 150 to 820 mg/L, with an average value of 342 mg/L. The City of Hanford reports electric conductivity values in 14 wells ranging from 210 to 820 micromhos per centimeter (µmhos/cm), with an average value of 554 µmhos/cm. (Department of Water Resources, 2006).

There are areas of shallow, saline groundwater in the southern portion of the Subbasin and localized areas of high arsenic. The City of Hanford reports odors caused by the presence of hydrogen sulfide. (Department of Water Resources, 2006).

### 6.2.2 - Groundwater Management

An adjudicated groundwater basin refers to when, because of a lawsuit, the court decides who extracts from the basin, how much they extract, and who will manage the basin. The San Joaquin River Groundwater Basin is not adjudicated, as defined by the *California Water Plan Update – Bulletin 160-98*, Figure 3-28 (p. 3-54) and Table 3-16 (p. 3-55) (California Department of Water Resources, 1998). Therefore, there are no limitations placed on groundwater pumpage volumes.

The City has not adopted a groundwater management plan. The *Lower Kings Basin Groundwater Management Plan Update* (GWP Update) has been adopted by the Kings River Conservation District, which includes the area of the groundwater subbasin in which the City underlies (Kings River Conservation District, 2005). The GWP Update includes goals and objectives for groundwater management and financing, governance options, and management and implementation plans.

The overall goal of the GMP Update is:

> To document the local approach to stopping overdraft, sustaining the local economy, and ensuring a sustainable groundwater system through development of specific projects and facilities to capture unallocated floodwater for groundwater storage and conjunctive use, whenever and wherever such water is available consistent with existing agreements, rights, and entitlements.

The objectives were crafted to reflect the District's values and priorities for meeting the GMP Update goal.

- Identify and build near-term groundwater recharge projects within each Water Management Area to capture flood flows; begin to stabilize the basin; and demonstrate project feasibility, benefits, and cost effectiveness;

- Establish rational and attainable Best Management Objectives, both regionally and for specific Water Management Areas, to measure and track progress;
- Formulate long-term regional strategies to take advantage of groundwater storage space in the Lower Kings Basin;
- Maintain local control of the groundwater basin by developing agreements and institutional arrangements that promote the responsible management of groundwater resources by overlying cities, water districts, agencies, companies, and landowners;
- Continue to track progress, and coordinate, GWP Update implementation;
- Research and define financing strategies and program oversight to implement the GWP Update projects and programs;
- Implement monitoring programs that increase the understanding of Lower Kings Basin operations, track progress toward meeting goals, and evaluate and forecast conditions; and
- Prevent degradation of groundwater quality.

The City is under no obligation to effectuate any of the goals, objectives, or plans outlined in the GWP Update.

The City will be involved in the formation and management of a locally-controlled Groundwater Sustainability Agency (GSA) under the Sustainable Groundwater Management Act (SGMA). However, as stated in the *2015 UWMPs Guidebook for Urban Water Suppliers* (California Department of Water Resources, 2016), "new requirements for groundwater management under SGMA will not apply to the 2015 UWMPs." Therefore, these requirements will not be further discussed in this 2015 UWMP.

### *6.2.3 - OVERDRAFT CONDITIONS*

As required by CWC 10631(b)(2), for basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted, an UWMP must include a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.

The Tulare Lake Subbasin and greater San Joaquin Valley Groundwater Basin (Groundwater Basin No. 5-22) have been in a state of overdraft for many years. The estimated average overdraft in the San Joaquin Valley Basin was estimated to be 239,000 AF in 1995 (California Department of Water Resources, 1998).

The City is located within an area defined by the Kings River Conservation District as Water Management Area (WMA) C in the GWP Update (see Figure 6-2). Within the WMA C, 20 representative wells show that average groundwater levels have fallen from above 190 feet above mean sea level (msl) to about 120 feet above msl between 1950 and 2005 (Kings River Conservation District, 2005). The following table provides cumulative and average annual overdraft within the WMA C area.

**Cumulative and Average Annual Overdraft in the WMA C Area (1950 – 2005)**

| Area (acres) | Total Overdraft 1950 to 2005 (AF) | Annual Overdraft 1950 to 2005 (AF/yr) | Total Overdraft 1965 to 2005 (AF) | Annual Overdraft 1965 to 2005 (AF/yr) |
|---|---|---|---|---|
| 57,328 | 501,000 | 9,000 | 243,000 | 6,000 |

Source: (Kings River Conservation District, 2005).

### 6.2.4 - Groundwater Pumping

The City currently utilizes local groundwater as its sole source of municipal water supply. The City's municipal water system extracts its water supply from underground aquifers via six active groundwater wells within the City limits (see Figure 3-3) and two in a wellfield approximately 5 miles north of the City. The City maintains four ground-level storage reservoirs within the distribution system, with a total capacity of 4.4 MG. In addition to the main domestic water supply, the City operates a separate system to supply industrial water to the Olam tomato processing plant. The two water systems can be connected in case of an emergency such as a major fire or natural disaster. A detailed discussion of water quality is contained in *Section 7 – Water Supply Reliability Assessment*.

The amount of groundwater pumped by the City over the last 5 years is shown in Table 6-1. The amount of groundwater projected to be pumped in 5-year increments over the next 20 years is shown in Table 4-2 in *Section 4 – System Water Use*. The projected retail demands for potable and raw water shown in the table are supplied solely by groundwater pumping.

**Table 6-1 Retail: Groundwater Volume Pumped**

| Table 6-1 Retail: Groundwater Volume Pumped | | | | | | |
|---|---|---|---|---|---|---|
| ☐ | Supplier does not pump groundwater.<br>The supplier will not complete the table below. | | | | | |
| Groundwater Type<br>*Drop Down List*<br>*May use each category multiple times* | Location or Basin Name | 2011 | 2012 | 2013 | 2014 | 2015 |
| *Add additional rows as needed* | | | | | | |
| Alluvial Basin | Subbasin 5-22.14 of the Tulare Lake Hydraulic Region | 2,289 | 2,471 | 2,579 | 2,422 | 2,076 |
| | TOTAL | 2,289 | 2,471 | 2,579 | 2,422 | 2,076 |

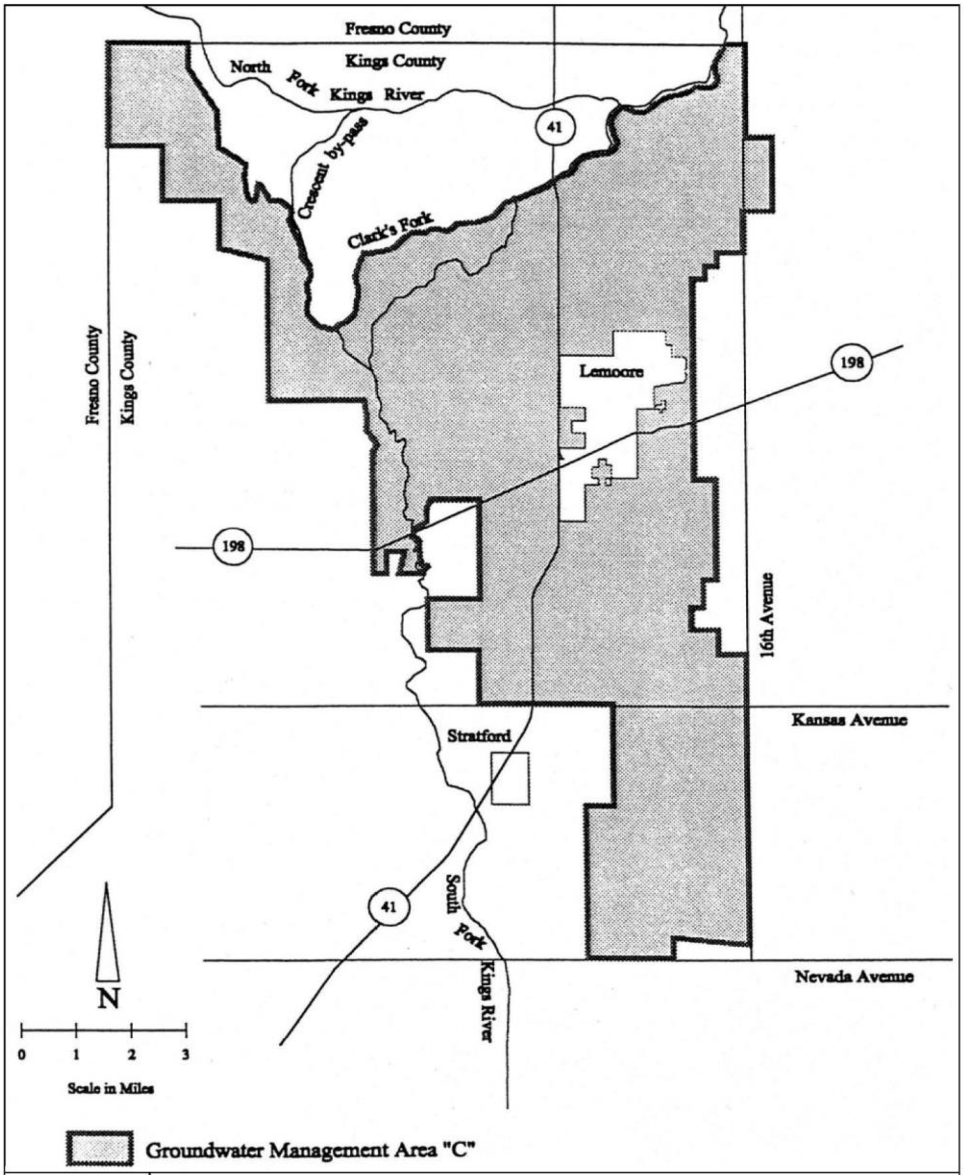



Figure 6-2
Water Management Area C

### 6.3 - Surface Water

The City does not draw water from streams, lakes or reservoirs for use in its potable water distribution system. There are no plans for the City to use surface water as part of its water supply.

### 6.4 - Stormwater

The City does not intentionally divert stormwater for beneficial use within its potable water distribution system. There are no plans for the City to use stormwater to offset water supply.

### 6.5 - Wastewater or Recycled Water

*CWC 10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area, and shall include all of the following:*

*(a) A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.*

*(b) A description of the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.*

*(f) A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.*

*(g) A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.*

The City of Lemoore Public Works Department operates a comprehensive wastewater collection, treatment, and disposal system that serves the City. The City's wastewater collection system is comprised of plastic pipelines and 17 pump stations. The City's wastewater treatment plant (WWTP) and Leprino Food's wastewater facilities are in the southwestern portion of the City. The City's WWTP is a secondary treatment facility with disinfection system that includes a headworks, aerated lagoons, and effluent chlorination. The Leprino Food's wastewater facilities include secondary-treatment level reactors and effluent ponding facilities; the effluent is routed through the City's lagoons and chlorinated prior to discharge with the rest of the City's treated effluent (City of Lemoore, 2007).

Wastewater from the City's WWTP is transported through a 6-mile outfall to a discharge point in the Westlake Canal, which transports water from the Kings River to Westlake Farms for row crop irrigation (City of Lemoore, 2007). Discharge into the canal is allowed by the Central Valley Regional Quality Control Board under Waste Discharge Requirements Order No. 96-050. There are currently no actions being taken to encourage the use of recycled water in the City.

The City is not using and does not plan to use wastewater or recycled water within the planning horizon of the 2015 UWMP and therefore, per the Guidebook, only Tables 6-2, 6-3, and 6-6 need to be completed.

### Table 6-2 Retail: Wastewater Collected Within Service Area in 2015

| Table 6-2 Retail: Wastewater Collected Within Service Area in 2015 | | | | | | |
|---|---|---|---|---|---|---|
| ☐ | There is no wastewater collection system. The supplier will not complete the table below. | | | | | |
| | Percentage of 2015 service area covered by wastewater collection system *(optional)* | | | | | |
| | Percentage of 2015 service area population covered by wastewater collection system *(optional)* | | | | | |
| Wastewater Collection | | | Recipient of Collected Wastewater | | | |
| Name of Wastewater Collection Agency | Wastewater Volume Metered or Estimated? *Drop Down List* | Volume of Wastewater Collected from UWMP Service Area 2015 | Name of Wastewater Treatment Agency Receiving Collected Wastewater | Treatment Plant Name | Is WWTP Located Within UWMP Area? *Drop Down List* | Is WWTP Operation Contracted to a Third Party? *(optional)* *Drop Down List* |
| *Add additional rows as needed* | | | | | | |
| City of Lemoore Public Workd Department | Metered | 689 | City of Lemoore | Lemoore WWTP | Yes | No |
| Total Wastewater Collected from Service Area in 2015: | | 689 | | | | |

### Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2015

| Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2015 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ☐ | No wastewater is treated or disposed of within the UWMP service area. The supplier will not complete the table below. | | | | | | | | | |
| | | | | | | | 2015 volumes | | | |
| Wastewater Treatment Plant Name | Discharge Location Name or Identifier | Discharge Location Description | Wastewater Discharge ID Number *(optional)* | Method of Disposal *Drop down list* | Does This Plant Treat Wastewater Generated Outside the Service Area? | Treatment Level *Drop down list* | Wastewater Treated | Discharged Treated Wastewater | Recycled Within Service Area | Recycled Outside of Service Area |
| *Add additional rows as needed* | | | | | | | | | | |
| Lemoore WWTP | Westlake Canal | Irrigation canal | WDR No. 96-050 | River or Creek Outfall | No | Secondary, Disinfected - 2.2 | 689 | 1,414 | 0 | 0 |
| | | | | | | Total | 689 | 1,414 | 0 | 0 |
| NOTES: Effluent totals include 537 MG from Lemoore WWTP and 877 MG from Leprino Foods wastewater facilities. | | | | | | | | | | |

**Table 6-6 Retail: Methods to Expand Future Recycled Water Use**

| Table 6-6 Retail: Methods to Expand Future Recycled Water Use | |
|---|---|
| ☑ | Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation. |

## 6.6 - Desalinated Water Opportunities

*CWC 16031(h). Describe desalinated water project opportunities for long-term supply.*

The City has no feasible opportunity for the development of a water desalination system as a long-term supply. With no nearby or convenient sources of saline water to desalinate, the cost of providing the water and then treating would outweigh the benefits.

## 6.7 - Exchange and Transfer Opportunities

*CWC 10631(d). Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.*

The City does not have any planned or potential future water exchanges or transfers.

## 6.8 - Future Water Projects

*CWC 10631(g). Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use, as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in average, single-dry, and multiple-dry water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.*

As shown in Table 6-7 below, the City is not expecting future water supply projects or programs. in the future.

**Table 6-7 Retail: Expected Future Water Supply Projects or Programs**

| Table 6-7 Retail: Expected Future Water Supply Projects or Programs | |
|---|---|
| ☑ | No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below. |

## 6.9 - Summary of Existing and Planned Sources of Water

As discussed above, the sole source of water for the City is through groundwater pumping. Continued groundwater pumping is also the only planned source of water in the future. Since

the Tulare Lake Subbasin is a non-adjudicated basin, there are currently no restrictions on groundwater pumping. The passage of SGMA may change this reality in the future, but the requirements of SGMA do not apply to 2015 UWMPs.

Per Bulletin 118, there are 17.1 million AF to a depth of 300 feet and 82.5 million AF to the base of fresh groundwater within the Tulare Lake Subbasin. However, the City's groundwater wells are located within the boundary of the City and much of the groundwater located in the Subbasin is not accessible to the City. Using the acreage of the existing City and a conservative estimate of 100 vertical feet of groundwater as the volume of groundwater accessible to City wells at various depths, it was calculated that the existing groundwater water supply available to the City is 178,228 MG (see Table 6-8). Please note that safe yield has not been calculated, but it is assumed that a quantification of safe yield will become mandatory during the next UWMP cycle in response to SGMA compliance.

**Table 6-8 Retail: Water Supplies – Actual**

| Table 6-8 Retail: Water Supplies — Actual | | | | |
|---|---|---|---|---|
| Water Supply | | 2015 | | |
| *Drop down list*<br>*May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool* | Additional Detail on Water Supply | Actual Volume | Water Quality<br>*Drop Down List* | Total Right or Safe Yield *(optional)* |
| *Add additional rows as needed* | | | | |
| Groundwater | | 178,228 | Drinking Water | |
| | **Total** | 178,228 | | 0 |

For the same reasons discussed above, it is assumed that the projected groundwater water supply available to the City is also 178,228 MG for each of the projected years (see Table 6-9). Actual projected groundwater water supply may change during the next UWMP cycle in response to the results of Groundwater Sustainability Plans developed in the Tulare Lake Subbasin to comply with SGMA.

**Table 6-9 Retail: Water Supplies – Projected**

| Table 6-9 Retail: Water Supplies — Projected | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Water Supply | | Projected Water Supply<br>*Report To the Extent Practicable* | | | | | | | | | |
| *Drop down list*<br>*May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool* | Additional Detail on Water Supply | **2020** | | **2025** | | **2030** | | **2035** | | **2040** *(opt)* | |
| | | Reasonably Available Volume | Total Right or Safe Yield *(optional)* | Reasonably Available Volume | Total Right or Safe Yield *(optional)* | Reasonably Available Volume | Total Right or Safe Yield *(optional)* | Reasonably Available Volume | Total Right or Safe Yield *(optional)* | Reasonably Available Volume | Total Right or Safe Yield *(optional)* |
| *Add additional rows as needed* | | | | | | | | | | | |
| Groundwater | Tulare Lake Subbasin (5-22.12) | 178,228 | | 178,228 | | 178,228 | | 178,228 | | 178,228 | |
| | Total | 178,228 | 0 | 178,228 | 0 | 178,228 | 0 | 178,228 | 0 | 178,228 | 0 |

# 8.0 CONTINGENCY ANALYSIS APPLICABILITY (Government Code Section 66473.7 (2)(b)

The City's adopted 2015 Regional Urban Water Management Plan provides a full spectrum of Water Shortage Contingency Plan measures (pages 49 through 64). These water supply contingency measures, applicable to the entire City of Lemoore municipal water service area, would be fully applicable to the Project and protective of the adequacy of the Project's water supply.

**The following pages are extracted directly from the adopted 2015 UWMP (Pages 49 through 64) in satisfaction of Government Code Section 66473.7 (2)(b).**

## SECTION 8 - WATER SHORTAGE CONTINGENCY PLANNING

*CWC 10632(a). The plan shall provide an urban water shortage contingency analysis that includes each of the following elements that are within the authority of the urban water supplier:*

*(1) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions that are applicable to each stage.*

*(2) An estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.*

*(3) Actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.*

*(4) Additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.*

*(5) Consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.*

*(6) Penalties or charges for excessive use, where applicable.*

*(7) An analysis of the impacts of each of the actions and conditions described in paragraphs (1) to (6), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.*

*(8) A draft water shortage contingency resolution or ordinance.*

*(9) A mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.*

*CWC 10632(b). Commencing with the urban water management plan update due July 1, 2016, for purposes of developing the water shortage contingency analysis pursuant to subdivision (a), the urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.*

The Urban Water Management Planning Act of 1983 requires water agencies to incorporate a water shortage contingency plan (WSCP) focusing on the allocation of water supplies and the management of water consumption during periods of shortage due to extended drought or a water emergency. This section describes the City's policies and ordinances to deal with water shortages. The City's water supply comes solely from groundwater pumping. As discussed in *Section 7 – Water Supply Reliability Assessment*, the City has a reliable water supply and is not vulnerable to seasonal and climatic shortages for the normal, dry-year, and multiple dry-year scenarios through year 2040. This reliability conclusion is caveated by the fact that future compliance with SGMA may require the City to come up with alternative sources of water in the future based on the result of the Groundwater Sustainability Plan to be developed. However, the City can now pump as much water as is required to supply its needs.

The City's WSCP illustrates specific water supply conditions that trigger the activation of voluntary and mandatory rationing efforts. It explains what the ability is to meet projected short-term demands during extended dry periods and emphasizes some of the significant proactive measures that enhance the City's ability to respond to interruptions in water supply should a natural or manmade disaster occur. The contingency plan outlines the planned response to failures in the infrastructure of the water system in the event of an earthquake, extensive power outage, or another catastrophic event. Finally, this section provides details about prohibitions and penalties against specific water uses during water shortages, and evaluates potential impacts to the water funds should water sales decrease because of supply shortages.

The City has enacted standard water conservation measures per Title 7 (Public Ways and Property), Chapter 7 (Water and Sewer Regulations), Article E (Water Conservation) of the City's Code. Specifically, Article E of the City's Code states:

7-7E-1: STANDARD WATER CONSERVATION MEASURES:

A. Definitions: Unless the context requires otherwise, the following definitions shall be used in the interpretation and construction of this section:

   DIRECTOR: The director of public works of the city of Lemoore.

   PERSON: Any individual, firm, partnership, association, corporation or political entity.

   WATER: Any water obtained from the water department of the city of Lemoore.

B. Application Of Regulations: The provisions of this section shall apply to all persons using city supplied water, both inside and outside of the city limits.

C. Regulations: In the use of water supplied by the city of Lemoore, the following requirements shall apply:

1. No person shall keep, maintain, operate, or use any water connection, hose, faucet, hydrant, pipe, outlet or plumbing fixture which is not tight and free from leakage, dripping or waste of water.

2. No person shall allow excessive water to run or waste from his property onto streets, highways or adjacent property.

3. No person shall willfully or negligently waste water in any manner.

4. Outdoor watering for those with even numbered addresses will be permitted on Tuesday, Thursday and Saturday, while odd numbered addresses may water on Wednesday, Friday and Sunday. Monday will be a day on which no outdoor watering is allowed.

5. The public works director may grant a thirty (30) day exception for new lawns not yet established.

6. Prohibition of draining of swimming pools with a capacity in excess of five thousand (5,000) gallons more than once every two (2) years, except for structural repairs or to comply with public health standards determined by the county health officer. Residents with private swimming pools shall file a written application for a permit prior to draining their pools with the public works department. The application shall include information as to reason for draining the pool and in case of repairs, the nature and duration of repairs to be made and the date on which the pool will be drained.

7. Washing of exterior asphalt or concrete areas is prohibited except for those businesses that are governed by the food and drug administration or state or county health department requirements that require these areas to be washed for health purposes. Documentation indicating such regulations must be provided to the director.

8. The use of water for washing cars, boats or other vehicles is prohibited without the use of a quick acting positive shutoff nozzle on the hose and the use of buckets for washing with water from the hose used for light rinsing. These regulations apply to residential customers. Car washes for fundraising events are prohibited.

9. Sprinkle, irrigate or otherwise apply water to any yard, ground, premises or vegetation on any day of the week between the hours of ten o'clock (10:00) A.M. and seven o'clock (7:00) P.M. during periods designated as "daylight savings time" (generally occurring between March and November).

10. Operate water fountains or other decorative water fixtures without recirculation pumps.

11. All new construction and remodeling or additions to habitable areas with a valuation in excess of five thousand dollars ($5,000.00) will be required to install

or replace existing faucets and showerheads with low flow devices and toilets with ultra low flow units. (Ord. 2015-06, 7-7-2015)

7-7E-2: WATER EFFICIENT LANDSCAPE ORDINANCE ADOPTED:

This section should be known as "an ordinance of the city of Lemoore adopting the California model water efficient landscape ordinance, California code of regulations, title 23, division 2, chapter 2.7" and any amendments thereto by reference. (Ord. 2015-06, 7-7-2015)

7-7E-3: FINDINGS OF NECESSITY:

It is necessary to minimize the potential for water shortage through the practice of water conservation pursuant to the provisions of California Water Code section 375 et seq. It is further necessary to reduce the potential effect of a water shortage on the residents, businesses and visitors of Lemoore and to adopt provisions that will significantly reduce the inefficient consumption of water, thereby extending the available water resources necessary for the domestic, sanitation, and fire protection of the community to the greatest extent possible. Nothing in this chapter shall prevent the city from also declaring a water emergency pursuant to California Water Code section 350, if circumstances warrant such a declaration. (Ord. 2015-06, 7-7-2015)

7-7E-4: WATER CUSTOMER:

"Water customer", for the purposes of this chapter, shall mean any person, partnership, business, corporation, special district, public agency, or association or legal entity to which the city of Lemoore (city) supplies water or "user" of water supplied by the city. (Ord. 2015-06, 7-7-2015)

7-7E-5: APPLICATION:

This article shall be applicable to all water customers. (Ord. 2015-06, 7-7-2015)

7-7E-6: EXCEPTIONS AND EXEMPTIONS:

A. Exceptions: The city manager or his or her designee shall grant an exception from the requirements of this chapter for any of the following reasons:

1. Water use is necessary to public health and safety or for essential government services; or
2. Recycled water is being used; or
3. Water use is necessary due to the medical needs of the water customer; or
4. An alternative water source/supply is available for use.

B. Exemptions: The city council may grant an exemption to the requirements of this chapter, with or without conditions, if it determines that a water customer would otherwise experience extreme financial hardship that cannot be mitigated. The city council shall review any requests for an exemption from compliance with this chapter. A written request for an exemption must be submitted to the city clerk a minimum of two (2) weeks prior to the regularly scheduled council meeting at which the exemption is to be considered. If appropriate, the city council may require the customer granted an exemption to reduce water use by other appropriate alternative methods. Notwithstanding any other provision of this code, there shall be no right to further administrative review or appeal of the determination of exemption of the city council. The city council may establish an "exemption processing fee" by resolution. (Ord. 2015-06, 7-7-2015)

7-7E-7: AUTHORIZATION:

The city council may declare the conservation stage based on a determination made by the city manager, or based upon any reduction in water supply or delivery that the city council determines in its sole discretion necessitates water conservation pursuant to this chapter. The city council may determine and order water prohibitions and restrictions as outlined herein in the following levels:

Voluntary compliance

Level I conservation measures

Level II conservation measures

Level III conservation measures

(Ord. 2015-06, 7-7-2015)

7-7E-8: VOLUNTARY COMPLIANCE:

At this level of the conservation plan, the goal is to inform the public of the pressing need to conserve water. This can be done through information and education measures, which can directly affect water use habits of the city's customer base. While education alone may not produce sustained water savings like other measures, it can enhance the effectiveness of other measures. Water bill inserts, pamphlets upon request, partnering with local schools to encourage water conservation practices, creating workshops for local plumbers, plumbing fixture suppliers, and builders or landscape and irrigation service providers are all examples of education and information measures the city can implement.

The goal of this measure is to have residents and businesses voluntarily comply with best practice water conservation measures, with the goal of reducing average water consumption by twenty percent (20%). Water tanks and wells will be monitored by the water department.

Additionally, landscape watering for municipal parks will be reduced from six (6) to four (4) days or less per week. (Ord. 2015-06, 7-7-2015)

7-7E-9: LEVEL I CONSERVATION MEASURES:

When pumping water levels drop twenty percent (20%) below the baseline measurement, the following restrictions shall apply in addition to or supersede the standard water conservation measures listed in section 7-7E-1 of this article:

A. Reduce the number of days for landscape watering to two (2) days per week. Even numbered addresses would be allowed to water on Tuesday and Saturday while odd numbered addresses would water on Wednesday and Sunday. No watering would be allowed on Monday, Thursday or Friday. Additionally, landscape watering would only be authorized before ten o'clock (10:00) A.M. and after seven o'clock (7:00) P.M. on designated days.

B. Hotels, restaurants, and bars shall only provide drinking water to customers upon request.

C. No water customer shall permit water to leak on his or her premises. Such leak shall be repaired in a timely manner after written notification by the city, but in no case in excess of seventy two (72) hours after notification.

D. Reduce landscape watering for municipal parks to two (2) days or less per week. (Ord. 2015-06, 7-7-2015)

7-7E-10: LEVEL II CONSERVATION MEASURES:

The following restrictions shall be applicable during a high water conservation alert as declared by the city council and whenever a recommendation has been made by the city manager in conjunction with the chief plant operator of the water treatment plant based upon a significant reduction or interruption in water supply or delivery that necessitates increased water conservation efforts:

A. All prohibitions and restrictions in level I (section 7-7E-9 of this article) shall be in effect.

B. Reduce the number of days for landscape watering to one day per week, depending upon the type of irrigation and the address. The city would be divided into three (3) sections: one section would be all of the area on the east side of Lemoore Avenue, another section would be the area north of Cinnamon Drive from 191/2 Avenue to Lemoore Avenue and the third section would be the area south of Cinnamon Drive to the west city limits. Watering between the hours of ten o'clock (10:00) A.M. and seven o'clock (7:00) P.M. is still prohibited.

C. The washing of personal vehicles is restricted to once per week, only on permitted watering days, and only with the use of the required quick acting positive shutoff nozzle.

D. Hotels are encouraged to implement laundry conservation measures by encouraging patrons to reuse linens and towels.

E. Landscape watering for municipal parks is restricted to one day per week and restrictions shall be implemented on golf course watering. (Ord. 2015-06, 7-7-2015)

7-7E-11: LEVEL III CONSERVATION MEASURES:

In the event of a major earthquake, large scale fire, or other so called "act of nature" which has or could have serious impacts on the city's total available water storage or delivery capacity, whether storage capacities have been reduced or not, or in the case of an unanticipated significant reduction in city water supply, a severe water conservation alert shall be declared by the city council.

A. All previous restrictions noted above in level I and level II shall be in effect.

B. Irrigation of landscapes is prohibited between the hours of eight o'clock (8:00) A.M. and eight o'clock (8:00) P.M.

C. Landscape watering for municipal parks shall be limited to one day per week.

D. Swimming pool refilling or new construction swimming pool filling is not authorized.

E. The city shall discontinue washing city vehicles or equipment except for health, safety or critical maintenance reasons.

F. Restrictions on golf course watering shall be increased. (Ord. 2015-06, 7-7-2015)

### 8.1 - Stages of Actions

In compliance with CWC 10632(a)(1), all water agencies are required to administer a strategy – an adopted ordinance or terms of service – to outline "stages of action" in response to water supply shortages. For compliance, Article E of the City's Code outlined above includes stages of action based on conservation measure level, namely:

- Voluntary compliance;
- Level I conservation measures;
- Level II conservation measures; and
- Level III conservation measures.

Table 8-1 provides a summary of the standard water conservation measures and four stages of action that may be enacted by the City Council.

**Table 8-1 Retail: Stages of Water Shortage Contingency Plan**

| Table 8-1 Retail: Stages of Water Shortage Contingency Plan | | |
|---|---|---|
| | Complete Both | |
| Stage | Percent Supply Reduction[1]<br>*Numerical value as a percent* | Water Supply Condition<br>(*Narrative description*) |
| *Add additional rows as needed* | | |
| Standard Water Conservation Measures | N/A | Fixtures free from leakage; no excessive water; watering days; possible new lawn exemption; swimming pool draining prohibitions; asphalt/concrete washing prohibitions; vehicle washing prohibitions; watering hours; reciculaton pumps requirement; and low-flow requirements for new construction, remodeling, and additions |
| Voluntary Compliance | up to 20% | Inform public about water conservation need and reduce landscape watering in municipal parks from six to four days or less per week |
| Level I Conservation Measures | up to 30% | Reduce landscape watering to two days per week (before 10 AM and after 7 PM); hotels, restaurants, and bars provide water only upon request; customers prohibited from allowing water to leak from premises and such leaks shall be repaired after written notice within 72 hours; and reduce landscape watering in municipal parks to two days per week |
| Level II Conservation Measures | up to 40% | All Level I prohibitions in effect; reduce landscape watering to one day per week (before 10 AM and after 7 PM); personal vehicle washing restricted to one per week on permitted days with shutoff nozzle; laundry conservation measures encouraged at hotels; and reduce landscape watering in municipal parks to one day per week; and implement gof course watering restrictions |
| Level III Conservation Measures | greater than 40% | All Level I and II prohibitions in effect; landscape watering prohibited between 8 AM and 8 PM; landscape watering in municipal parks limited to one day per week; prohibit swimming pool refilling and new construction of swimming pools; City shall discontinue washing City vehicles or equipment except for health, safety, or critical maintenance reasons; gold course watering restrcition shall be increased |
| [1] *One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.* | | |
| NOTES: The percent supply reduction are just guesstimates because the reductions are not codified in the City's Code except for Voluntary Compliance. | | |

Title 7 (Public Ways and Property), Chapter 7 (Water and Sewer Regulations), and Article E (Water Conservation) of the City's Code was implemented in response to Governor Brown's

Executive Order No. B-29-15, directing that the State Water Resources Control Board to develop and impose restrictions on urban water users to achieve a statewide 25% reduction in potable urban water use.

## 8.2 - Prohibition on End Uses

In compliance with CWC Section 10632(a)(4) and CWC Section 10632(a)(5), prohibitions on end users are defined in Title 7 (Public Ways and Property), Chapter 7 (Water and Sewer Regulations), Article E (Water Conservation) of the City's Code shown above. Table 8-2 summarizes the mandatory restrictions and prohibitions placed on end users.

**Table 8-2 Retail Only: Restrictions and Prohibitions on End Uses**

| Table 8-2 Retail Only: Restrictions and Prohibitions on End Uses | | | |
|---|---|---|---|
| Stage | Restrictions and Prohibitions on End Users<br>*Drop down list*<br>*These are the only categories that will be accepted by the WUEdata online submittal tool* | Additional Explanation or Reference *(optional)* | Penalty, Charge, or Other Enforcement?<br>*Drop Down List* |
| *Add additional rows as needed* | | | |
| SWCM | Landscape - Restrict or prohibit runoff from landscape irrigation | | Yes |
| SWCM, I, II, III | Landscape - Limit landscape irrigation to specific times | | Yes |
| SWCM, VC, I, II, III | Landscape - Limit landscape irrigation to specific days | | Yes |
| II | CII - Lodging establishment must offer opt out of linen service | | Yes |
| I | CII - Restaurants may only serve water upon request | | Yes |
| SWCM | Water Features - Restrict water use for decorative water features, such as fountains | | Yes |
| SWCM, III | Other water feature or swimming pool restriction | | Yes |
| SWCM, I | Other - Customers must repair leaks, breaks, and malfunctions in a timely manner | | Yes |
| SWCM | Other - Require automatic shut of hoses | | Yes |
| SWCM | Other - Prohibit use of potable water for washing hard surfaces | | Yes |
| SWCM, I, II, III | Other | | Yes |
| NOTES: SWCM = Standard Water Conservation Measures (7-7E-1) and VC = Voluntary Compliance (7-7E-8) | | | |

### 8.2.1 - LANDSCAPE IRRIGATION

The following summarizes landscape irrigation restrictions by stages:

- Standard Water Conservation Measures – Prohibit excessive runoff from property, prohibit willful and negligent water waste, limit outdoor watering to certain days based on address, limit irrigation to certain times;
- Voluntary Compliance – Reduce municipal park watering from six to four days per week;
- Level I Conservation Measures – Reduce landscape watering to two days per week and increase time of day restrictions and municipal park watering to two days per week;
- Level II Conservation Measures – Reduce landscape watering to one day per week and increase time of day restrictions and municipal park watering to one day per week as well as impose golf course watering restrictions; and
- Level IIII Conservation Measures – Increase time of day restrictions, reduce municipal park watering to one day per week, and increase golf course watering restrictions.

### 8.2.2 - COMMERCIAL, INDUSTRIAL, AND INSTITUTIONAL (CII)

The following summarizes CII restrictions by stages:

- Standard Water Conservation Measures – None;
- Voluntary Compliance – None;
- Level I Conservation Measures – Hotels, restaurants, and bars will only serve water if requested;
- Level II Conservation Measures – Encourage hotels to implement laundry conservation measures; and
- Level IIII Conservation Measures – None.

### 8.2.3 - WATER FEATURES AND SWIMMING POOLS

The following summarizes restrictions on water features and swimming pools by stages:

- Standard Water Conservation Measures – Prohibit swimming pool draining greater than 5,000 gallons more than once every two years except for repair or public health reasons and prohibit fountains or other decorative features without recirculating pumps;
- Voluntary Compliance – None;
- Level I Conservation Measures – None;
- Level II Conservation Measures – None; and
- Level IIII Conservation measures – Prohibit swimming pool filling and new construction.

### 8.2.4 - Other Restrictions

The following summarizes other restrictions by stages:

- Standard Water Conservation Measures – Ensure fixtures, etc. tight and free from leakage, prohibit washing hard surfaces except for public health reasons, prohibit washing vehicles without use of buckets and shutoff nozzles, and require all new construction as well as remodels and additions greater than $5,000 to install or replace faucets and showerheads with low-flow devices and toilets with low-flow units;
- Voluntary Compliance – None;
- Level I Conservation Measures – Prohibit outdoor water from leaving property and leak shall be repaired after written notification within 72 hours;
- Level II Conservation Measures – Restrict personal vehicle washing to once per week with shutoff nozzle; and
- Level IIII Conservation Measures – Prohibit City vehicle washing except certain reasons.

## 8.3 - Penalties, Charges, Other Enforcement of Prohibitions

In accordance with CWC Section 10632(a)(6), Title 7 (Public Ways and Property), Chapter 7 (Water and Sewer Regulations), Article E (Water Conservation) of the City's Code also includes penalties for violations of the standard water conservation measures and each of the four stages. These penalties are as follows:

<u>7-7E-12: PENALTIES:</u>

A. Use Of Water: No water customer of the city shall knowingly use, or permit the use of, water in a manner contrary to any provisions of this article, or in an amount in excess of that use permitted by the provisions of this article.

B. Violation; Infraction: Unless otherwise provided, any water customer violating any provision of this article shall be guilty of an infraction, and each day or portion thereof such violation is in existence shall be a new and separate offense.

C. Violations: Any water customer determined to be guilty of a first time violation shall be given a written reminder for compliance. Second and subsequent violations shall be punishable as follows:

   1. Standard Conservation Measures And Level I Conservation Measures: A written notice of such a violation shall be given and a charge shall be added to the water bill of such person as a onetime penalty as follows:

      a. Second violation: Twenty five dollars ($25.00).
      b. Third violation: Fifty dollars ($50.00).
      c. Fourth violation: One hundred dollars ($100.00).

d. Fifth violation: A written notice will be given of a fifth violation and the consumer shall have a flow restrictor placed in their service until such time that they can assure the public works director that no more waste will occur. All costs, including overhead, for this installation shall be billed to the customer.

2. Level II Conservation Measures: A written notice of such a violation shall be given and a penalty shall be added to the water bill of such person as a onetime penalty as follows:

   a. Second violation: Forty dollars ($40.00).
   b. Third violation: Seventy five dollars ($75.00).
   c. Fourth violation: One hundred fifty dollars ($150.00).
   d. Fifth violation: A written notice will be given of a fifth violation and the consumer shall have a flow restrictor placed in their service until such time that they can assure the public works director that no more waste will occur. All costs, including overhead, for this installation shall be billed to the customer.

3. Level III Conservation Measures: A written notice of such a violation shall be given and a penalty shall be added to the water bill of such a person as a onetime penalty as follows:

   a. Second violation: Fifty five dollars ($55.00).
   b. Third violation: One hundred dollars ($100.00).
   c. Fourth violation: Two hundred dollars ($200.00).
   d. Fifth violation: A written notice will be given of a fifth violation and the consumer shall have a flow restrictor placed in their service until such time that they can assure the public works director that no more waste will occur. All costs, including overhead, for this installation shall be billed to the customer.

D. Determination Of Number Of Offenses: To determine whether a violation is other than a first offense, only notices issued within one year after the date of the first notice will be considered.

E. Enforcement Of Penalties: In addition to the above remedies, the city manager or his or her designee is empowered to enforce any or all of the following penalties:

1. Place a flow restricting device upon the water service;
2. Lock off of a water meter;
3. Remove a water meter;
4. Shut off the service connection.

F. Costs Borne By Customer: All costs or expenses incurred by the city for enforcement of this section shall be borne by the water customer. No water service shall be limited

or discontinued until the city manager or his or her designee provides a written notice of intent to so limit or discontinue such service and the reasons for such decision, and further, provides such water customer notice of the right to request an administrative review and hearing pursuant to the procedures set forth in title 1, chapter 10 of this code. (Ord. 2015-06, 7-7-2015)

7-7E-13: COMPLIANCE:

The city manager or his or her designee shall enforce the provisions of this article. (Ord. 2015-06, 7-7-2015)

7-7E-14: WAIVER:

To apply for a full or partial waiver of the mandatory water conservation requirements to accommodate your disability, you must submit a letter explaining your need for additional water use based on your disability. Send your letter requesting a waiver of the mandatory water conservation requirements to the city manager.

The city will consider each application for a full or partial waiver of the water restrictions on an individual basis. The city may request that you provide medical information to support your need for an exemption to the current water restrictions. Responses to waiver requests will be provided in thirty (30) days. All waiver requests that have been granted are subject to review and cancellation. If any waivers are obtained based on inaccurate information, applications may be subject to fines and additional charges. (Ord. 2015-06, 7-7-2015)

## 8.4 - Consumption Reduction Methods

In compliance with CWC Section 10632(a)(5), consumption reduction methods are actions that are taken by the City to reduce water demand within the service area whereas the prohibitions (see Section 8.2) limit specific uses of water. DWR allows water agencies, such as the City, to make their own determinations as to which methods and which stages for employing the methods are most appropriate for a service area.

### 8.4.1 - Consumption Reduction Goals

The consumption reduction goals for the various stages are:

- Standard Water Conservation Measures – Not applicable;
- Voluntary Compliance – up to 20% reduction;
- Level I Conservation Measures – up to 30% reduction;
- Level II Conservation Measures – up to 40% reduction; and
- Level IIII Conservation Measures – greater than 40% reduction.

### 8.4.2 - Categories of Consumption Reduction Methods

The following consumption reduction methods listed in the Guidelines have been implemented by the City:

- Expand Public Information Campaign – Examples include enlarge media campaign; create bill inserts with conservation information; articles submitted to local newspapers; conduct water efficiency workshops for different customer sectors; and
- Other – any other method that does not fall in to the categories listed in the Guidelines.

Table 8-3 provides a summary of the consumption reduction methods currently employed by the City.

**Table 8-3 Retail Only: Stages of Water Shortage Contingency Plan – Consumption Reduction Methods**

| Table 8-3 Retail Only:<br>Stages of Water Shortage Contingency Plan - Consumption Reduction Methods | | |
|---|---|---|
| Stage | Consumption Reduction Methods by Water Supplier<br>*Drop down list*<br>*These are the only categories that will be accepted by the WUEdata online submittal tool* | Additional Explanation or Reference *(optional)* |
| *Add additional rows as needed* | | |
| VC | Expand Public Information Campaign | 7-7E-8 (Voluntary Compliance) |
| N/A | Other | 7-7E-2 (Water Efficient Landscape Ordinance Adopted) |
| NOTES: VC = Voluntary Compliance | | |

### *Expand Public Information Campaign*

In accordance with 7-7E-8 of the City's Code, the primary goal of Voluntary Compliance is to inform the public of the pressing need to conserve water. This can be done through information and education measures, which can directly affect water use habits of the City's customer base. While education alone may not produce sustained water savings like other measures, it can enhance the effectiveness of other measures. Water bill inserts, pamphlets upon request, partnering with local schools to encourage water conservation practices, creating workshops for local plumbers, plumbing fixture suppliers, and builders or landscape and irrigation service providers are all examples of education and information measures the city can implement.

### Other

#### CALIFORNIA MODEL WATER EFFICIENT LANDSCAPE ORDINANCE ADOPTION

In accordance with 7-7E-2 of the City's Code, the City adopted the California Model Water Efficient Landscape Ordinance (23 CCR Division 2, Chapter 2.7 and any amendments) (see Appendix B).

#### WATER CONSERVATION WEBSITE

The City will be making public a website dedicated to water conservation. This website will include tips on how to conserve water, provide information on rebates and other opportunities to incentivize customers to save water, and provide useful contact information and links.

#### PUBLIC OUTREACH

The City Water Department recently adopted a water conservation mascot named "AquaBob" that will be performing public outreach to school-age children at events throughout the school year. AquaBob will educate and inform the children about the need for water conservation and provide simple steps to implement water conservation strategies at home and school.

## 8.5 - Determining Water Shortage Reductions

The following discussion is provided to comply with CWC Section 10632(a)(9). The City's water system is supplied by groundwater wells. Each well has a flow meter that records the amount of water entering the City's distribution system. The City use these meters to monitor actual reductions in water use within the service area. The City is using the SWRCB emergency regulation method to measure and determine actual water savings made from implementing the WSCP. The SWRCB uses 2013 water production data and requires water agencies to report monthly water production as compared to 2013. The City has maintained more than a 19% reduction as compared to 2013.

## 8.6 - Revenue and Expenditure Impacts

The following discussion is provided to comply with CWC Section 10632(a)(7). Most operating costs for most water agencies are fixed rather than a function of the amount of water sold. Thus, when conservation programs are undertaken, it is frequently necessary to raise water rates because the revenue generated is based on lower total consumption while the costs, and resulting revenue required, are basically fixed. Typically, water rates need to be increased by the percentages listed in Table 8-1 when the indicated stages are implemented. However, reductions in water demands, especially peak demands, can delay the need to develop costly new water sources in growing communities. The City currently charges water customers a flat fee based on meter size plus a volumetric charge for water use.

Currently, the City does not have an emergency fund but will consider establishing such a fund to mitigate the impacts of a water shortage. The fund would then be used to stabilize water rates during periods of water shortage. Excess water revenues collected because of rate adjustments would be used to enhance the emergency fund.

### 8.7 - Resolution or Ordinance

In compliance with CWC Section 10632(a)(8), Title 7 (Public Ways and Property), Chapter 7 (Water and Sewer Regulations), Article E (Water Conservation) of the City's Code is discussed above. This adopted City Code provides a water shortage contingency solution.

### 8.8 - Catastrophic Supply Interruption

The following discussion is provided to comply with CWC Section 10632(a)(3). The Act refers to catastrophic interruptions as regional power outages, natural disasters, and other disasters that stop the water supply. The Level III Conservation Measures have been developed in the event of a "major earthquake, large scale fire, or other so called 'act of nature' which has or could have serious impacts on the city's total available water storage or delivery capacity, whether storage capacities have been reduced or not, or in the case of an unanticipated significant reduction in city water supply." If such an act of nature occurs, "a severe water conservation alert shall be declared by the city council." Additionally, during a catastrophic interruption, the City will activate a water shortage response team. The response team will coordinate with applicable City departments and emergency services. Other actions and procedures to be followed during catastrophic events will be developed.

### 8.9 - Minimum Supply Next Three Years

As required by CWC Section 10632(a)(2), an UWMP must include an estimate of the minimum water supply available to the City during each of the next three years. The District's water supply is derived completely from groundwater wells. Table 8-4 provides an estimate of the minimum water supply available during the next three years.

**Table 8-4 Retail: Minimum Supply Next Three Years**

| Table 8-4 Retail: Minimum Supply Next Three Years | | | |
|---|---|---|---|
| | 2016 | 2017 | 2018 |
| Available Water Supply | 178,228 | 178,228 | 178,228 |

# 9.0 ASSESSMENT FINDINGS

As previously stated, the Project would require 518 AF (or approximately 169 MG) of water per year from the City's water system, which is reliant on groundwater pumping. The City can produce up to approximately 6,912 MG per year of potable water. The projected 2040 demand in the City is 4,830 MG, leaving a difference of 2,082 MG. At 169 MG, the Project would account for approximately 8.1% of the projected 2040 demand in the City. Since the City's 2015 UWMP has projected sufficient reasonably available volumes of water and because the Project is within the population growth assumptions (and associated water availability) identified in both the City's 2015 UWMP and 2020 WMP, there is sufficient water to serve the Project.

The City's General Plan provides policies related to annexation of agricultural properties. Specifically, General Plan Policy PU-I-10 states the following: "Require that developers of agricultural land to be annexed to the City offer the water rights associated with this land to the City." The Project Applicant currently has 100 water shares (equivalent to 150 AFY) that are subject to this Policy.

Therefore, it is recommended that the City of Lemoore approve this assessment for inclusion in the CEQA documentation for the proposed Lacey Ranch Area Master Plan Project.

# APPENDIX H

**ENVIRONMENTAL NOISE ASSESSMENT**

**LACEY RANCH AREA MASTER PLAN**
**LEMOORE, CALIFORNIA**

**WJVA Report No. 20-046**

**PREPARED FOR**

**CRAWFORD & BOWEN PLANNING, INC.**
**113 NORTH CHURCH STREET, SUITE 302**
**VISALIA, CALIFORNIA 93291**

**PREPARED BY**

**WJV ACOUSTICS, INC.**
**VISALIA, CALIFORNIA**

**JUNE 24, 2021**

# 1. INTRODUCTION

## Project Description:

Within the Lacey Ranch Area Master Plan, the Project applicant is proposing to subdivide and develop approximately 156 acres of land into a planned residential community with a mix of single-family and multi-family housing units. The Project will be constructed in four phases, as outlined below. The exact numbers of each housing type may vary slightly, depending on final density. However, there will be a maximum of 825 housing units in total. Specific housing types include:

- ±164 compact lots with an average lot size of 4,500 square feet
- ±310 medium lots with an average lot size of 6,500 square feet
- ±73 estate lots with an average lot size of 9,500 square feet
- ±145 multifamily units at 20 units per acre
- ±59 multifamily units at 12 units per acre

The Project includes a total of four parks for a total of 7.9 acres and 1.64 acres of trail area. The 1.64 acres of trail area will be designated and zoned consistent with the designations and zoning of their adjacent parcels.

The site has been designed with seven points of ingress and egress. One of these points connects at W. Lacey Blvd along the northern edge of the Project; three access points connect at 18th Avenue on the western edge; two access points are along the southern edge; and one access point is along the eastern edge. The Project will be responsible for construction of internal roadways as well as for potential improvements to surrounding roadways to accommodate the Project.

## Environmental Noise Assessment:

This environmental noise assessment has been prepared to determine if significant noise impacts will be produced by the project and to describe mitigation measures for noise if significant impacts are determined. The environmental noise assessment, prepared by WJV Acoustics, Inc. (WJVA), is based upon the project Site Plan provided by the applicant (Figure 1), traffic data provided by JLB Traffic, and a project site visit on January 5 and 6, 2021. Revisions to the Site Plan, project traffic information or other project-related information available to WJVA at the time the analysis was prepared may require a reevaluation of the findings and/or recommendations of the report.

Appendix A provides definitions of the acoustical terminology used in this report. Unless otherwise stated, all sound levels reported in this analysis are A-weighted sound pressure levels in decibels (dB). A-weighting de-emphasizes the very low and very high frequencies of sound in a manner similar to the human ear. Most community noise standards utilize A-weighted sound levels, as they correlate well with public reaction to noise. Appendix B provides examples of sound levels for reference.

## 2. THRESHOLDS OF SIGNIFICANCE

The CEQA Guidelines apply the following questions for the assessment of significant noise impacts for a project:

a. Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

### a. Noise Level Standards

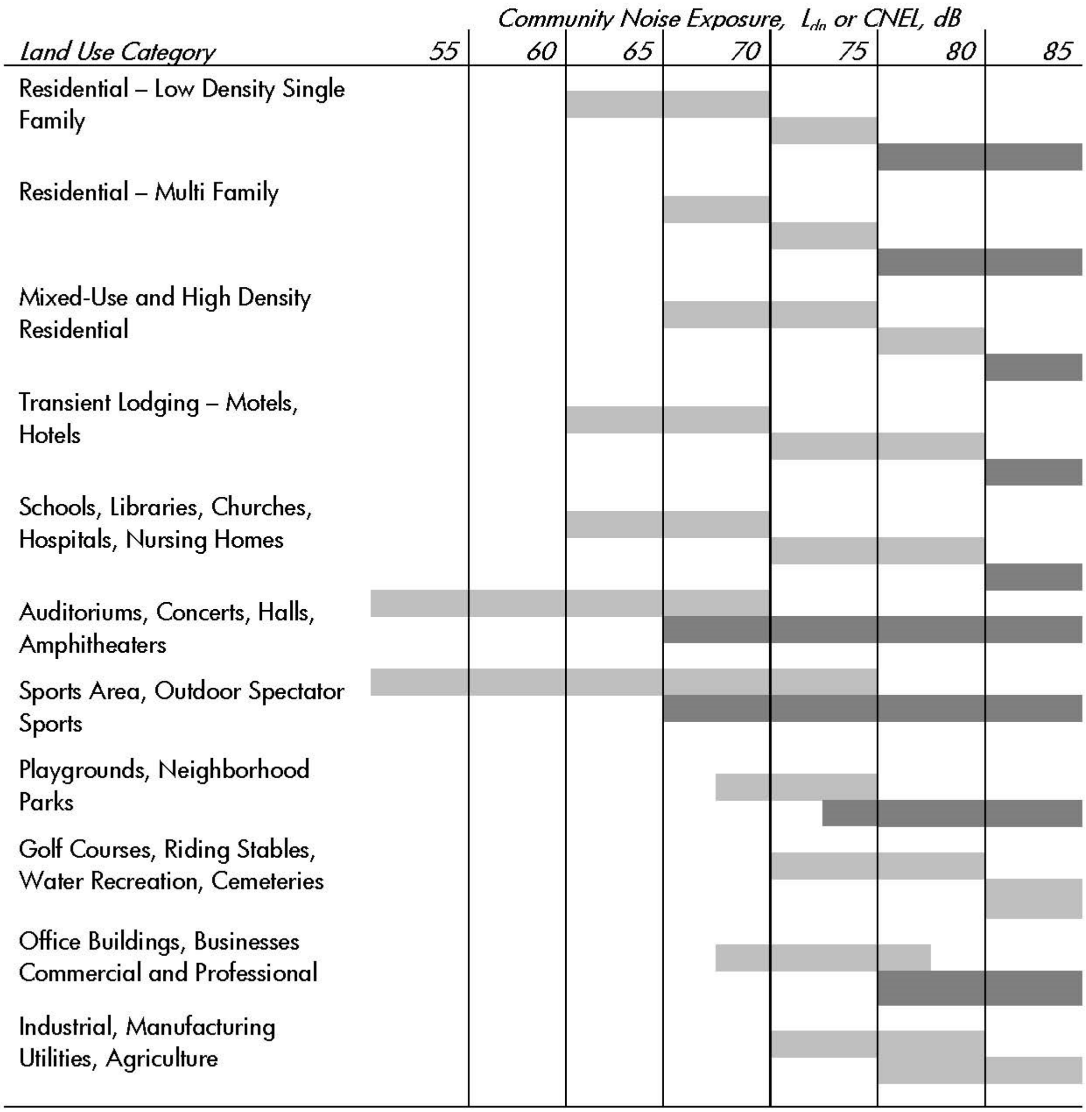
CITY OF LEMOORE

**General Plan**

The City of Lemoore General Plan Noise Element[1] provides exterior noise level criteria for land use compatibility for community noise environments. The General Plan sets noise compatibility standards for transportation noise sources in terms of the Day-Night Average Level ($L_{dn}$). The $L_{dn}$ (also referred to as DNL) represents the time-weighted energy average noise level for a 24-hour day, with a 10 dB penalty added to noise levels occurring during the nighttime hours (10:00 p.m.-7:00 a.m.). The $L_{dn}$ represents cumulative exposure to noise over an extended period of time and are therefore calculated based upon *annual average* conditions. Table I provides the General Plan Land Use Noise Compatibility Guidelines for exterior noise levels. Additionally, the General Plan states *"Consider an increase of five or more dBA to be "significant" if the resulting noise level would exceed that described as "normally acceptable" in Table 8.6."* (Table I below).

Table I: City of Lemoore Land Use Noise Compatibility Guidelines

**Table 8.6 Land Use Compatibility For Community Noise Environments**




Legend:

| | |
|---|---|
| Normally Acceptable | Specified land use is satisfactory, based upon the assumption that any building involved is of normal conventional construction, without any special noise insulation requirements. |
| Conditionally Acceptable | New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice. |
| Normally Unacceptable | New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. |
| Clearly Unacceptable | New construction or development should not be undertaken. |

**Municipal Code**

Section 9-5B-2 (Noise, Odor and Vibration Performance Standards) of The City of Lemoore Municipal Code[2] provides additional exterior and interior noise level standards. The Municipal Code sets noise compatibility standards in terms of the Community Noise Equivalent Level (CNEL). Both the $L_{dn}$ and CNEL represent the time-weighted energy average noise level for a 24-hour day, with a 10 dB penalty added to noise levels occurring during the nighttime hours (10:00 p.m.-7:00 a.m.). The CNEL includes an additional penalty of 5 dB (technically 4.77 dB) that is added to noise levels occurring during the evening hours between 7:00 p.m. and 10:00 p.m. Both the $L_{dn}$ and CNEL represent cumulative exposure to noise over an extended period of time and are therefore calculated based upon *annual average* conditions. The $L_{dn}$ and CNEL are considered to be equivalent descriptors of the community noise environment for the purposes of this study. Table II provides the interior and exterior noise level standards provided in the City's Municipal Code.

**TABLE II**

**INTERIOR AND EXTERIOR NOISE LEVEL STANDARDS, dBA**
**CITY OF LEMOORE MUNICIPAL CODE**

| Land Use | Noise Standards (dB $L_{dn}$/CNEL) | |
|---|---|---|
| | Interior Noise | Exterior Noise |
| Residential Uses | 45 | 65[1] |
| Professional Uses In Mixed-Use Zones | 45 | 70 |
| Commercial | -- | 70 |
| Office | 50 | 70 |
| Industrial | 55 | 75 |
| Public Facilities | 50 | 70 |
| Parks | -- | 70 |
| Schools | 50 | 65 |

[1]Outdoor Living Aeras e.g., backyards

## State of California

There are no state noise standards that are applicable to the project.

## Federal Noise Standards

There are no federal noise standards that are applicable to the project.

## b. Construction Noise and Vibration

Section 9-5B-2 (Noise, Odor and Vibration Performance Standards) of The City of Lemoore Municipal Code[2] provides some generalized guidance in regards to allowable hours of construction as well as acceptable vibration levels:

**Construction**

*Limitation On Hours Of Construction: To ensure that nearby residents as well as nonresidential activities are not disturbed by noise from early morning or late night activities, the following limits on construction are established:*

- *Monday through Saturday, seven o'clock (7:00) A.M. to eight o'clock (8:00) P.M.*

- *Extended construction hours may only be allowed by the review authority through conditions of approval between eight o'clock (8:00) P.M. and ten o'clock (10:00) P.M.*

- *On Sundays and national holidays, construction activities may only be allowed by the review authority through conditions of approval between nine o'clock (9:00) A.M. and five o'clock (5:00) P.M.*

**Vibration**

*Vibration Standards: Uses that generate vibrations that may be considered a nuisance or hazard on any adjacent property shall be cushioned or isolated to prevent generation of vibrations. Uses shall be operated in compliance with the following provisions:*

- *Uses shall not generate ground vibration that is perceptible without instruments by the average person at any point along or beyond the property line of the parcel containing the activities;*

- *Uses, activities, and processes shall not generate vibrations that cause discomfort or annoyance to reasonable persons of normal sensitivity or which endanger the comfort, repose, health, or peace of residents whose properties abut the property lines of the subject parcel;*

- *Uses shall not generate ground vibration that interferes with the operations of equipment and facilities of adjoining parcels; and*

- *Vibrations from temporary construction/demolition and vehicles that leave the subject parcel (e.g., trucks, trains, and aircraft) are exempt from the provisions of this section. (Ord. 2013-05, 2-6-2014)*

Additional guidance in regards to vibration guidelines can be found in the California Department of Transportation (Caltrans) Transportation and Construction Vibration Guidance Manual[3]. The Manual provides guidance for determining annoyance potential criteria and damage potential threshold criteria. These criteria are provided below in Table III and Table IV, and are presented in terms of peak particle velocity (PPV) in inches per second (in/sec). The PPV levels reported in Table III and Table IV represent those measured at the potential receiver location.

**TABLE III**

**GUIDELINE VIBRATION ANNOYANCE POTENTIAL CRITERIA**

| Human Response | Maximum PPV (in/sec) at Receiver | |
|---|---|---|
| | Transient Sources | Continuous/Frequent Intermittent Sources |
| Barely Perceptible | 0.04 | 0.01 |
| Distinctly Perceptible | 0.25 | 0.04 |
| Strongly Perceptible | 0.9 | 0.1 |
| Severe | 2.0 | 0.4 |

Source: Caltrans

**TABLE IV**

**GUIDELINE VIBRATION DAMAGE POTENTIAL THRESHOLD CRITERIA**

| Structure and Condition | Maximum PPV (in/sec) at Receiver | |
|---|---|---|
| | Transient Sources | Continuous/Frequent Intermittent Sources |
| Extremely fragile, historic buildings, ancient monuments | 0.12 | 0.08 |
| Fragile buildings | 0.2 | 0.1 |
| Historic and some old buildings | 0.5 | 0.25 |
| Older residential structures | 0.5 | 0.3 |
| New residential structures | 1.0 | 0.5 |
| Modern industrial/commercial buildings | 2.0 | 0.5 |

Source: Caltrans

## 3. SETTING

The proposed Project is located on approximately 156-acres immediately north of the City of Lemoore in Kings County and is bounded by W. Lacey Blvd to the north and 18th Avenue to the west. The Project is on assessor parcel number 021-030-057-000. The project site currently consists of agricultural land uses.

Surrounding land uses generally include agricultural land uses to the west, north and east and residential land uses to the south. There is a small parcel of land owned by the City of Lemoore located at the southwest portion of the project site, which currently includes a solar energy operation and a water storage tank.

### a. Background Noise Level Measurements

Existing noise levels in the project vicinity are dominated by traffic noise along W. Lacey Boulevard and 18th Street. Additional sources of noise in the project vicinity include occasional aircraft overflights (including aircraft associated with the Lemoore Naval Air Station), noise associated with agricultural activities and noise associated with residential activities (barking dogs, voices, landscaping activities, etc.).

Measurements of existing ambient noise levels in the project vicinity were conducted between January 5, 2021 and January 6, 2021. Long-term (24-hour) ambient noise level measurements were conducted at one (1) location (site LT-1). Ambient noise levels were measured for a period of 24 continuous hours at site LT-1. Site LT-1 was located in the southwest portion of the project site, adjacent to the City-owned enclosed parcel and in the vicinity of residential land uses to the south. The noise monitoring site was exposed to traffic noise associated with vehicles on 18th Avenue as well as activities occurring within the City-owned parcel. The location of the long-term measurement site is provided on Figure 2.

Measured hourly energy average noise levels ($L_{eq}$) at site LT-1 ranged from a low of 54.6 dB between 2:00 a.m. and 3:00 a.m. to a high of 59.1 dBA between 3:00 p.m. and 4:00 p.m. Hourly maximum ($L_{max}$) noise levels at site LT-1 ranged from 59.8 to 75.5 dBA. Residual noise levels at the monitoring site, as defined by the $L_{90}$, ranged from 52.0 to 56.4 dBA. The $L_{90}$ is a statistical descriptor that defines the noise level exceeded 90% of the time during each hour of the sample period. The $L_{90}$ is generally considered to represent the residual (or background) noise level in the absence of identifiable single noise events from traffic, aircraft and other local noise sources. The measured $L_{dn}$ value at site LT-1 for the 24-hour measurement period was 61.8 dB $L_{dn}$. Figure 3 graphically depicts hourly variations in ambient noise levels at site LT-1 for the 24-hour measurement period and provides a photograph of measurement site LT-1.

Additionally, short-term (15-minute) ambient noise level measurements were conducted at four (4) locations (Sites ST-1 through ST-4). Two (2) individual measurements were taken at each of the four short-term sites to quantify ambient noise levels in the morning and afternoon hours. The locations of the long-term and short-term noise monitoring sites are shown as Figure 2.

Short-term noise measurements were conducted for 15-minute periods at each of the four sites. Site ST-1 was located near residential land uses south of the project site, near Glendale Avenue and Quandt Drive, and was exposed to noise associated with roadway traffic and residential activities. Site ST-2 was located along the western portion of the project site, along 18th Street, and was exposed to noise associated with roadway traffic and agricultural activities. Site ST-3 was located along the northern portion of the project site, along W. Lacey Boulevard, and was exposed to noise associated with roadway traffic and agricultural activities. Site ST-4 was located within the residential area south of the project site near the southeastern portion of the project site, along Ashland Drive, and was exposed to noise associated with roadway traffic and residential activities.

Table V summarizes short-term noise measurement results. The noise measurement data included energy average ($L_{eq}$) maximum ($L_{max}$) as well as five individual statistical parameters. Observations were made of the dominant noise sources affecting the measurements. The statistical parameters describe the percent of time a noise level was exceeded during the measurement period. For instance, the $L_{90}$ describes the noise level exceeded 90 percent of the time during the measurement period, and is generally considered to represent the residual (or background) noise level in the absence of identifiable single noise events from traffic, aircraft and other local noise sources.

**TABLE V**

**SUMMARY OF SHORT-TERM NOISE MEASUREMENT DATA**
**LACEY RANCH MASTER PLAN**
**JANUARY 5 &6, 2021**

| Site | Time | A-Weighted Decibels, dBA | | | | | | | Sources |
|---|---|---|---|---|---|---|---|---|---|
| | | $L_{eq}$ | $L_{max}$ | $L_2$ | $L_8$ | $L_{25}$ | $L_{50}$ | $L_{90}$ | |
| ST-1 | 7:50 a.m. | 52.8 | 66.4 | 62.0 | 56.0 | 51.4 | 48.4 | 44.8 | TR, AC |
| ST-1 | 4:30 p.m. | 55.2 | 72.1 | 63.8 | 57.0 | 52.4 | 46.2 | 43.1 | TR, AC |
| ST-2 | 8:15 a.m. | 62.0 | 72.5 | 71.1 | 67.9 | 61.9 | 52.5 | 45.2 | TR, C, AC |
| ST-2 | 4:55 p.m. | 63.5 | 76.2 | 70.4 | 66.6 | 62.8 | 54.1 | 45.0 | TR, AC |
| ST-3 | 8:35 a.m. | 62.7 | 73.7 | 72.1 | 68.8 | 61.9 | 53.0 | 45.5 | TR, C |
| ST-3 | 5:15 p.m. | 65.0 | 76.2 | 71.4 | 66.8 | 62.2 | 52.4 | 44.0 | TR |
| ST-4 | 8:55 a.m. | 44.6 | 51.9 | 48.0 | 46.8 | 45.5 | 44.3 | 41.6 | TR, AC |
| ST-4 | 5:35 p.m. | 47.1 | 62.3 | 50.1 | 47.7 | 44.9 | 42.0 | 38.7 | TR |

TR: Traffic AC: Aircraft C: Construction V: Voices D: Barking Dogs
Source: WJV Acoustics, Inc.

# 4. NOISE IMPACTS TO OFF-SITE SENSITIVE RECEPTORS, AND MITIGATION MEASURES

## a. Project Traffic Noise Impacts on Existing Noise-Sensitive Land Uses Outside Project Site (Less Than Significant)

WJVA utilized the FHWA Traffic Noise Model[4] to quantify expected project-related increases in traffic noise exposure along roadways in the project vicinity. The FHWA Model is a standard analytical method used by state and local agencies for roadway traffic noise prediction. The model is based upon reference energy emission levels for automobiles, medium trucks (2 axles) and heavy trucks (3 or more axles), with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA Model was developed to predict hourly $L_{eq}$ values for free-flowing traffic conditions, and is generally considered to be accurate within ±1.5 dB. To predict $L_{dn}$ values, it is necessary to determine the hourly distribution of traffic for a typical day and adjust the traffic volume input data to yield an equivalent hourly traffic volume.

Average Daily Traffic (ADT) volumes for the analyzed receptor locations were provided by JLB Traffic Engineering. ADT traffic volumes were provided for Existing (without project), Existing Plus Project, Cumulative 2040 No Project and Cumulative 2040 Plus Project traffic scenarios.

The percentage of trucks and the day/night distribution of traffic on local roadways used for modeling was approximated based upon data previously obtained by WJVA from previous projects in the project vicinity. The Noise modeling assumptions used to calculate project traffic noise are provided as Appendix C.

Traffic noise exposure levels for specific scenarios were calculated based upon the FHWA Model and the above-described model inputs and assumptions. Project-related significant impacts would occur if an increase in traffic noise associated with the project would result in noise levels exceeding the City's applicable noise level standards at the location(s) of sensitive receptors or result in an increase of five (5) dB or more if the resulting noise level would exceed that described as "normally acceptable" in Table I (above).

The General Plan Noise Element considers a noise exposure up to 60 dB $L_{dn}$ as "normally acceptable" for low density single family residential land uses. Traffic noise was modeled at fifteen (15) representative receptor locations in the project vicinity. The fifteen modeled receptors are located at roadway setback distances representative of the sensitive receptors along each analyzed roadway segment. The receptor locations are described below and provided graphically on Figure 4.

- R-1: Residential land use located approximately 190 feet from the centerline of Lacey Blvd.
- R-2: Residential land use located approximately 115 feet from the centerline of Lacey Blvd.
- R-3: Residential land use located approximately 125 feet from the centerline of Lacey Blvd.
- R-4: Residential land use located approximately 320 feet from the centerline of Lacey Blvd.
- R-5: Residential land use located approximately 135 feet from the centerline of 18th Ave.

- R-6: Residential land use located approximately 125 feet from the centerline of 18th Ave.
- R-7: Residential land use located approximately 90 feet from the centerline of 19th Ave.
- R-8: Residential land use located approximately 90 feet from the centerline of Liberty Dr.
- R-9: Residential land use located approximately 90 feet from the centerline of Hanford Armona Rd.
- R-10: Residential land use located approximately 70 feet from the centerline of Hanford Armona Rd.
- R-11: Residential land use located approximately 80 feet from the centerline of Liberty Dr.
- R-12: Residential land use located approximately 150 feet from the centerline of Hanford Armona Rd.
- R-13: Residential land use located approximately 120 feet from the centerline of Cinnamon Dr.
- R-14: Residential land use located approximately 75 feet from the centerline of Cinnamon Dr.
- R-13: Residential land use located approximately 90 feet from the centerline of Hanford Armona Rd.

**Existing Conditions**

Table VI provides Existing and Existing Plus Project traffic noise exposure levels at the fifteen analyzed receptor locations. The receptor locations are representative of existing residential land uses located along the analyzed roadway segments. Noise levels described in Table VI does not include an existing acoustical shielding (noise level reduction) that may occur as a result of any existing sound walls, intervening buildings or topography, and should be considered a worst-case assessment of traffic noise exposure levels at the receptor locations.

Reference to Table VI indicates that project-related increases in traffic noise at nearby sensitive receptor locations would generally increase by less than 1 dB for existing traffic conditions. Project-related increases in traffic noise at receptor locations located along Lacey Boulevard, east of the future alignment of Mary Drive (R-3 and R-4) would be approximately 1 dB for existing traffic conditions. Project-related increases in traffic noise at receptor locations along 18th Avenue (Lemoore Street), south of the project site (R-5 and R-6) would be approximately 2 to 3 dB for existing traffic conditions.

Project-related increases in traffic noise along the fifteen analyzed receptor locations would not result in noise levels exceeding the City's 60 dB $L_{dn}$ exterior noise level standard or result in an increase of 5 dB at any receptor location. It should be noted, while traffic noise exposure levels at some receptor locations (R-10, R-15) do exceed the City's 60 dB $L_{dn}$ exterior noise level standard, this exceedance is not a result of the project, and is therefore not considered to be a significant impact. Additionally, many receptors have existing sound walls which would result in noise levels lower than those described in Table VI.

**TABLE VI**

**PROJECT-RELATED INCREASES IN TRAFFIC NOISE, dB, $L_{dn}$**
**LACEY RANCH MASTER PLAN, LEMOORE**
**EXISTING CONDITIONS**

| Modeled Receptor | Existing | Existing Plus Project | Change (Maximum) | Significant Impact? |
|---|---|---|---|---|
| R-1 | 53 | 53 | 0 | No |
| R-2 | 57 | 58 | +1 | No |
| R-3 | 57 | 58 | +1 | No |
| R-4 | 51 | 52 | +1 | No |
| R-5 | 55 | 57 | +2 | No |
| R-6 | 55 | 58 | +3 | No |
| R-7 | 55 | 55 | 0 | No |
| R-8 | 53 | 53 | 0 | No |
| R-9 | 59 | 59 | 0 | No |
| R-10 | 60 | 61 | +1 | No |
| R-11 | 52 | 53 | +1 | No |
| R-12 | 56 | 56 | 0 | No |
| R-13 | 51 | 51 | 0 | No |
| R-14 | 56 | 57 | +1 | No |
| R-15 | 60 | 60 | 0 | No |

Source: WJV Acoustics, Inc.
JLB Traffic Engineering

## Cumulative 2040 Conditions

Table VII provides Cumulative 2040 and Cumulative 2040 Plus Project traffic noise exposure levels at the fifteen analyzed receptor locations. The receptor locations are representative of existing residential land uses located along the analyzed roadway segments. Noise levels described in Table VII does not include an existing acoustical shielding (noise level reduction) that may occur as a result of any existing sound walls, intervening buildings or topography, and should be considered a worst-case assessment of traffic noise exposure levels at the receptor locations.

Reference to Table VII indicates that project-related increases in traffic noise at nearby sensitive receptor locations would generally increase by less than 1 dB for Cumulative 2040 traffic conditions. Project-related increases in traffic noise at receptor locations located along Lacey Boulevard, east of the future alignment of Mary Drive (R-3 and R-4) would be approximately 1 dB for Cumulative 2040 traffic conditions. Project-related increases in traffic noise at receptor locations along 18$^{th}$ Avenue (Lemoore Street), south of the project site (R-5 and R-6) would be approximately 2-3 dB for Cumulative 2040 traffic conditions.

Project-related increases in traffic noise along the fifteen analyzed receptor locations would not result in noise levels exceeding the City's 60 dB $L_{dn}$ exterior noise level standard or result in an

increase of 5 dB at any receptor location. It should be noted, while traffic noise exposure levels at some receptor locations (R-9, R-10 and R-15) do exceed the City's 60 dB $L_{dn}$ exterior noise level standard, this exceedance is not a result of the project, and is therefore not considered to be a significant impact. Additionally, many receptors have existing sound walls (including R-9, R-10 and R-15) which would result in noise levels lower than those described in Table VII.

**TABLE VII**

**PROJECT-RELATED INCREASES IN TRAFFIC NOISE, dB, $L_{dn}$**
**LACEY RANCH MASTER PLAN, LEMOORE**
**CUMULATIVE 2040 CONDITIONS**

| Modeled Receptor | 2040 No Project | 2040 Plus Project | Change (Maximum) | Significant Impact? |
|---|---|---|---|---|
| R-1 | 54 | 54 | 0 | No |
| R-2 | 58 | 59 | +1 | No |
| R-3 | 58 | 59 | +1 | No |
| R-4 | 52 | 53 | +1 | No |
| R-5 | 55 | 57 | +2 | No |
| R-6 | 55 | 58 | +3 | No |
| R-7 | 56 | 56 | 0 | No |
| R-8 | 55 | 55 | 0 | No |
| R-9 | 60 | 60 | 0 | No |
| R-10 | 61 | 62 | +1 | No |
| R-11 | 54 | 54 | 0 | No |
| R-12 | 56 | 57 | +1 | No |
| R-13 | 52 | 52 | 0 | No |
| R-14 | 57 | 57 | 0 | No |
| R-15 | 60 | 60 | 0 | No |

Source: WJV Acoustics, Inc.
JLB Traffic Engineering

### b. Noise from Construction (Less Than Significant With Mitigation)

Construction noise would occur at various locations within the project site through the buildout period. Existing sensitive receptors could be located as close as 100 feet from construction activities. Table VIII provides typical construction-related noise levels at distances of 100 feet, 200 feet, and 300 feet.

Construction noise is not considered to be a significant impact if construction is limited to the allowed hours and construction equipment is adequately maintained and muffled. Extraordinary noise-producing activities (e.g., pile driving) are not anticipated. The City of Lemoore limits hours of construction to occur only between the hours of 7:00 a.m. to 8:00 p.m., Monday through Saturday. Construction activities outside of these hours, as well as Sundays and Holidays, may

only be allowed by the review authority through conditions of approval between. Construction noise impacts could result in annoyance or sleep disruption for nearby residents if nighttime operations were to occur or if equipment is not properly muffled or maintained.

**TABLE VIII**

**TYPICAL CONSTRUCTION EQUIPMENT MAXIMUM NOISE LEVELS, dBA**

| Type of Equipment | 100 Ft. | 200 Ft. | 300 Ft. |
|---|---|---|---|
| Concrete Saw | 84 | 78 | 74 |
| Crane | 75 | 69 | 65 |
| Excavator | 75 | 69 | 65 |
| Front End Loader | 73 | 67 | 63 |
| Jackhammer | 83 | 77 | 73 |
| Paver | 71 | 65 | 61 |
| Pneumatic Tools | 79 | 73 | 69 |
| Dozer | 76 | 70 | 66 |
| Rollers | 74 | 68 | 64 |
| Trucks | 80 | 72 | 70 |
| Pumps | 74 | 68 | 64 |
| Scrapers | 81 | 75 | 71 |
| Portable Generators | 74 | 68 | 64 |
| Backhoe | 80 | 74 | 70 |
| Grader | 80 | 74 | 70 |

Source: FHWA
*Noise Control for Buildings and Manufacturing Plants*, Bolt, Beranek & Newman, 1987

**Potential Impact**:
A noise impact could occur if construction activities do not incorporate appropriate mitigation measures and best management practices.

**Mitigation Measures:**
Noise levels associated with construction activities may be effectively mitigated by incorporating noise mitigation measures and appropriate best management practices. The following mitigation measures and best management practices should be applied during periods of project construction.

- Per the City of Lemoore Municipal Code, construction activities should not occur outside the hours of 7:00 a.m. to 8:00 p.m. Monday through Saturday and all day on Sunday.

- All construction equipment shall be properly maintained and muffled as to minimize noise generation at the source.

- Noise-producing equipment shall not be operating, running, or idling while not in immediate use by a construction contractor.

- All noise-producing construction equipment shall be located and operated, to the extent possible, at the greatest possible distance from any noise-sensitive land uses.

- Locate construction staging areas, to the extent possible, at the greatest possible distances from any noise-sensitive land uses.

- Signs shall be posted at the construction site and near adjacent sensitive receptors displaying hours of construction activities and providing the contact phone number of a designated noise disturbance coordinator.

### c. Vibration Impacts (Less Than Significant)

The dominant sources of man-made vibration are sonic booms, blasting, pile driving, pavement breaking, demolition, diesel locomotives, and rail-car coupling. None of these activities are anticipated to occur with construction or operation of the proposed project. Vibration from construction activities could be detected at the closest sensitive land uses, especially during movements by heavy equipment or loaded trucks and during some paving activities (if they were to occur). Typical vibration levels at distances of 100 feet and 300 feet are summarized by Table IX. These levels would not be expected to exceed any significant threshold levels for annoyance or damage, as provided above in Table III and Table IV.

**TABLE IX**

**TYPICAL VIBRATION LEVELS DURING CONSTRUCTION**

| | PPV (in/sec) | |
|---|---|---|
| **Equipment** | **@ 100´** | **@ 300´** |
| Bulldozer (Large) | 0.011 | 0.006 |
| Bulldozer (Small) | 0.0004 | 0.00019 |
| Loaded Truck | 0.01 | 0.005 |
| Jackhammer | 0.005 | 0.002 |
| Vibratory Roller | .03 | 0.013 |
| Caisson Drilling | .01 | 0.006 |

Source: *Caltrans*

After full project build out, it is not expected that ongoing operational activities will result in any vibration impacts at nearby sensitive uses. Activities involved in trash bin collection could result in minor on-site vibrations as the bin is placed back onto the ground. Such vibrations would not be expected to be felt at the closest off-site sensitive uses. Additional mitigation is not required.

## 5. NOISE IMPACTS TO PROPOSED ON-SITE SENSITIVE RECEPTORS, AND MITIGATION MEASURES

The proposed residential development would result in new on-site sensitive receptors. These proposed residential land uses are subject to the noise level compatibility guidelines provided above in Table I.

### a. Traffic Noise Impacts To Proposed On-Site Receptors (Less Than Significant With Mitigation)

**Exterior Noise Levels**

The City of Lemoore General Plan establishes an exterior noise level standard of 60 dB $L_{dn}$ within outdoor activity areas of residential land uses, and the City's Municipal Code establishes an interior noise level standard of 45 dB $L_{dn}$ within residential land uses. Transportation-related noise level exposures resulting from roadways within the project site would not result in an exceedance of these standards due to low traffic speeds and low traffic volumes. However, the proposed project includes sensitive receptors (residential land uses) that could be impacted by traffic noise exposure adjacent to arterial roadways (specifically 18th Avenue and Lacey Boulevard) that border the project site.

WJVA used the above-described FHWA traffic noise model and traffic noise modeling assumptions to determine the distances from the center of the roadways to the 60 dB CNEL/$L_{dn}$ noise exposure contour. Table X provides the approximate distances from the center of the arterial roadways adjacent to the project site to the 60 dB CNEL/$L_{dn}$ noise exposure contours. Table X provides the contour distances for 2040 Cumulative plus project traffic conditions, as they represent a worst-case assessment of traffic noise exposure at proposed sensitive receptor locations.

**TABLE X**

**DISTANCES TO 60 dB CNEL/$L_{dn}$ TRAFFIC NOISE CONTOURS**
**LACEY RANCH MASTER PLAN**
**2040 CUMULATIVE PLUS PROJECT CONDITIONS**

| Roadway Segment (Description) | Distance (feet) to 60 dB CNEL/$L_{dn}$ |
|---|---|
| Lacey Blvd. (east of 18th Avenue) | 92 |
| Lacey Blvd. (west of 17th Avenue) | 102 |
| 18th Avenue (Lacey Blvd to Street "S") | 70 |
| 18th Avenue (Street "S" to Glendale Avenue) | 89 |

Source: WJV Acoustics, Inc.
JLB Traffic Engineering

**Potential Impact**:
An exterior noise impact could occur if the outdoor activity areas of proposed multi- and single-family residential land uses are located within the 2040 cumulative conditions 60 dB CNEL/$L_{dn}$ traffic noise contours, described above in Table X. Outdoor activity areas are generally considered to be backyards of single-family residential land uses and outdoor common use areas (pools, BBQ/Picnic areas, playgrounds, etc.) and individual patios and balconies of multi-family residential land uses. Based upon the site plan (Figure 1), residential land uses are proposed adjacent to these arterial roadways.

If the outdoor activity areas of the proposed residential land uses located along the roadways described above in Table X are within the 60 dB CNEL/$L_{dn}$ contour (as described in Table X), an impact would be expected to occur. Such impacts could occur at proposed residential land uses adjacent to these roadways.

**Mitigation Measures:**
Noise levels from transportation noise sources may be effectively mitigated by incorporating noise mitigation measures into the project design that consider the geographical relationship between the noise sources of concern and potential receptors, the noise-producing characteristics of the sources and the path of transmission between noise sources and sensitive receptors.

Based upon the existing site, plan WJVA conducted a preliminary analysis of sound wall mitigation along Lacey Boulevard and 18th Avenue. A sound wall insertion loss program based on the FHWA Model was used to calculate the insertion loss (noise reduction) provided by a sound wall constructed along the project property line along the roadways. The model calculates the insertion loss of a wall of given height based on the effective height of the noise source, height of the receiver, distance from the receiver to the wall, and distance from the noise source to the wall. The standard assumptions used in the sound wall calculations are effective source heights of 8, 2 and 0 feet above the roadway for heavy trucks, medium trucks and automobiles, respectively. The standard height of a residential receiver is five feet above the ground elevation.

The preliminary sound wall analysis indicated that a sound wall constructed to a minimum height of 6 feet above project site grade would generally provide approximately 5 dB of noise level reduction within the proposed residential lots. This preliminary analysis indicates that with a 6-foot sound wall, outdoor activity areas located at a minimum setback distance of approximately fifty (50) feet from the centerline of both 18th Avenue and Lacey Boulevard would comply with the 60 dB CNEL/$L_{dn}$ exterior noise level standard. This analysis should be considered preliminary in nature.

**Interior Noise Levels**
The City of Lemoore Municipal Code establishes an interior noise level standard of 45 dB CNEL/$L_{dn}$ within indoor habitable spaces. The intent of the interior noise level standard is to provide an acceptable noise environment for indoor communication and sleep.

A specific analysis of interior noise levels was not performed. However, it may be assumed that residential construction methods complying with current building code requirements will reduce exterior noise levels by approximately 25 dB if windows and doors are closed. As the exterior noise exposure levels at any proposed residential land uses would not be expected to exceed 70 dB CNEL/$L_{dn}$, this will be sufficient for compliance with the City's 45 dB $L_{dn}$ interior standard at all proposed lot (70-25=45). Requiring that it be possible for windows and doors to remain closed for sound insulation means that air conditioning or mechanical ventilation will be required.

### b. Noise Impacts from Nearby Airports or Airstrips (No Impact)

The Project site is not located within two miles of a public airport or private airstrip.

## 6. IMPACT SUMMARY

This impact summary addresses only the noise impacts determined to be "potentially significant" and summarizes the mitigation measures that would be required to reduce noise levels to a "less than significant" level or states that the impact may be significant an unavoidable. Potential impacts and correlating mitigation measures are described in detail above, and summarized below.

- A noise impact could occur if construction activities do not incorporate appropriate mitigation measures and best management practices. Noise levels associated with construction activities may be effectively mitigated by incorporating noise mitigation measures and appropriate best management practices. The following mitigation measures and best management practices should be applied during periods of project construction.

    - Per the City of Lemoore Municipal Code, construction activities should not occur outside the hours of 7:00 a.m. to 8:00 p.m. Monday through Saturday and all day on Sunday.

    - All construction equipment shall be properly maintained and muffled as to minimize noise generation at the source.

    - Noise-producing equipment shall not be operating, running, or idling while not in immediate use by a construction contractor.

    - All noise-producing construction equipment shall be located and operated, to the extent possible, at the greatest possible distance from any noise-sensitive land uses.

    - Locate construction staging areas, to the extent possible, at the greatest possible distances from any noise-sensitive land uses.

    - Signs shall be posted at the construction site and near adjacent sensitive receptors displaying hours of construction activities and providing a contact phone number of a designated noise disturbance coordinator.

**This impact is considered less than significant with mitigation.**

- An exterior noise impact could occur if the outdoor activity areas of proposed multi- and single-family residential land uses are located within the 2040 cumulative conditions 60 dB CNEL/$L_{dn}$ traffic noise contours, described above in Table X. Outdoor activity areas are generally considered to be backyards of single-family residential land uses and outdoor common use areas (pools, BBQ/Picnic areas, playgrounds, etc.) and individual patios and balconies of multi-family residential land uses. Based upon the site plan (Figure 1), residential land uses are proposed adjacent to these arterial roadways.

- Noise levels from transportation noise sources may be effectively mitigated by incorporating noise mitigation measures into the project design that consider the geographical relationship between the noise sources of concern and potential receptors, the noise-producing characteristics of the sources and the path of transmission between noise sources and sensitive receptors. Options for noise mitigation include the use of building setbacks, project design and the construction of berms and sound walls.

**This impact is considered less than significant with mitigation.**

## 7. SOURCES CONSULTED

1. City of Lemoore General Plan, May 2008.

2. City of Lemoore Municipal Code, March 16, 2021.

3. California Department of Transportation, *Transportation and Construction Vibration Guidance Manual,* September 2013.

4. Federal Highway Administration, *Traffic Noise Model, Version 2.5,* April 14, 2004

## FIGURE 1: PROJECT LAND USE PLAN

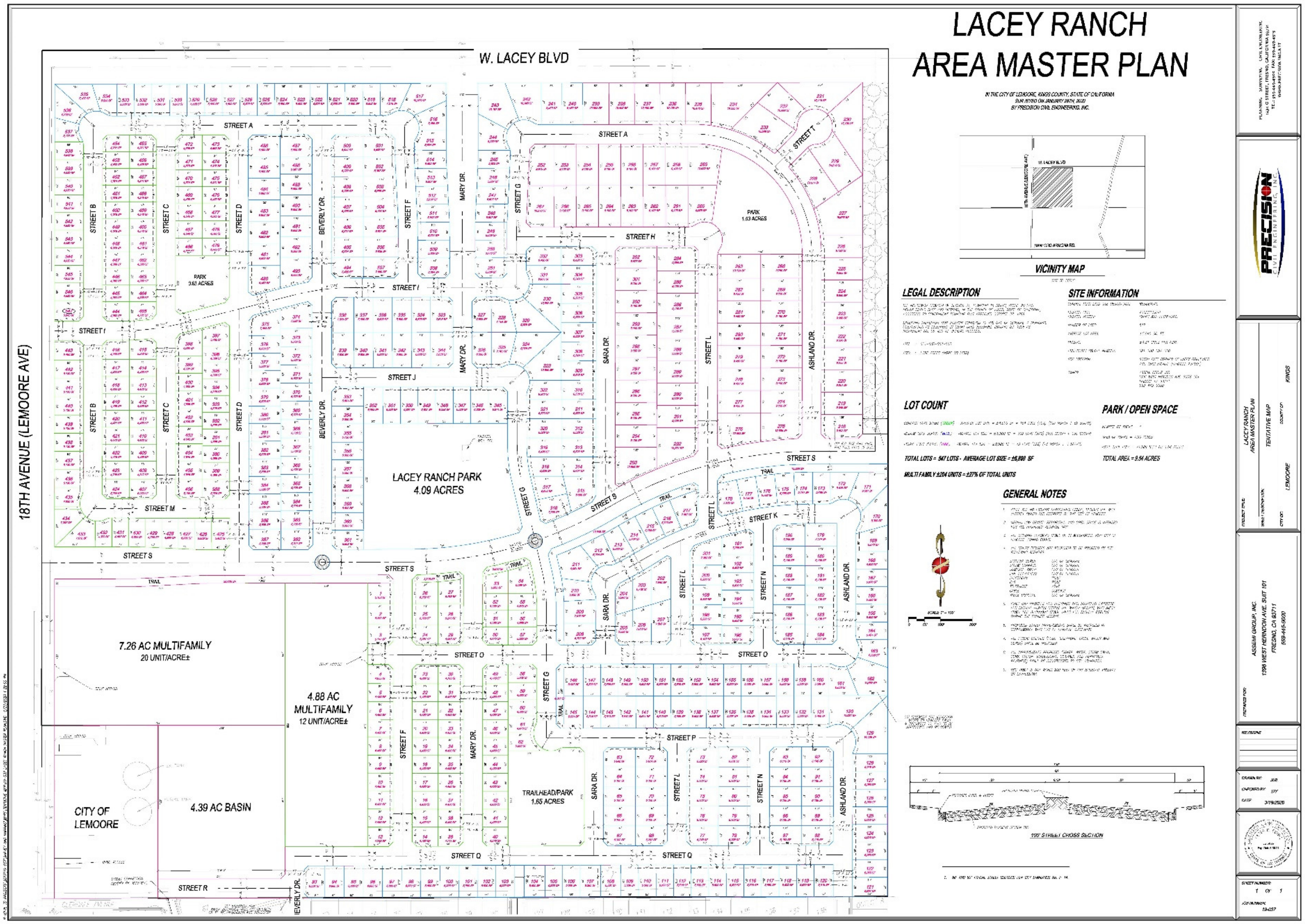
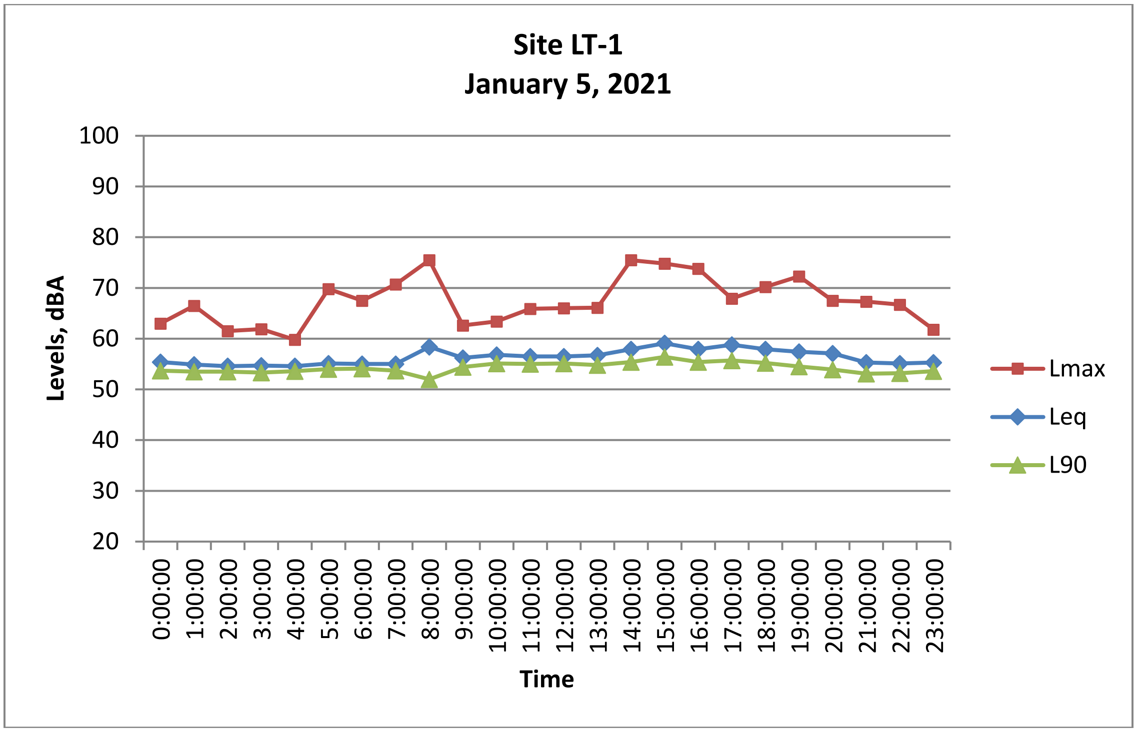
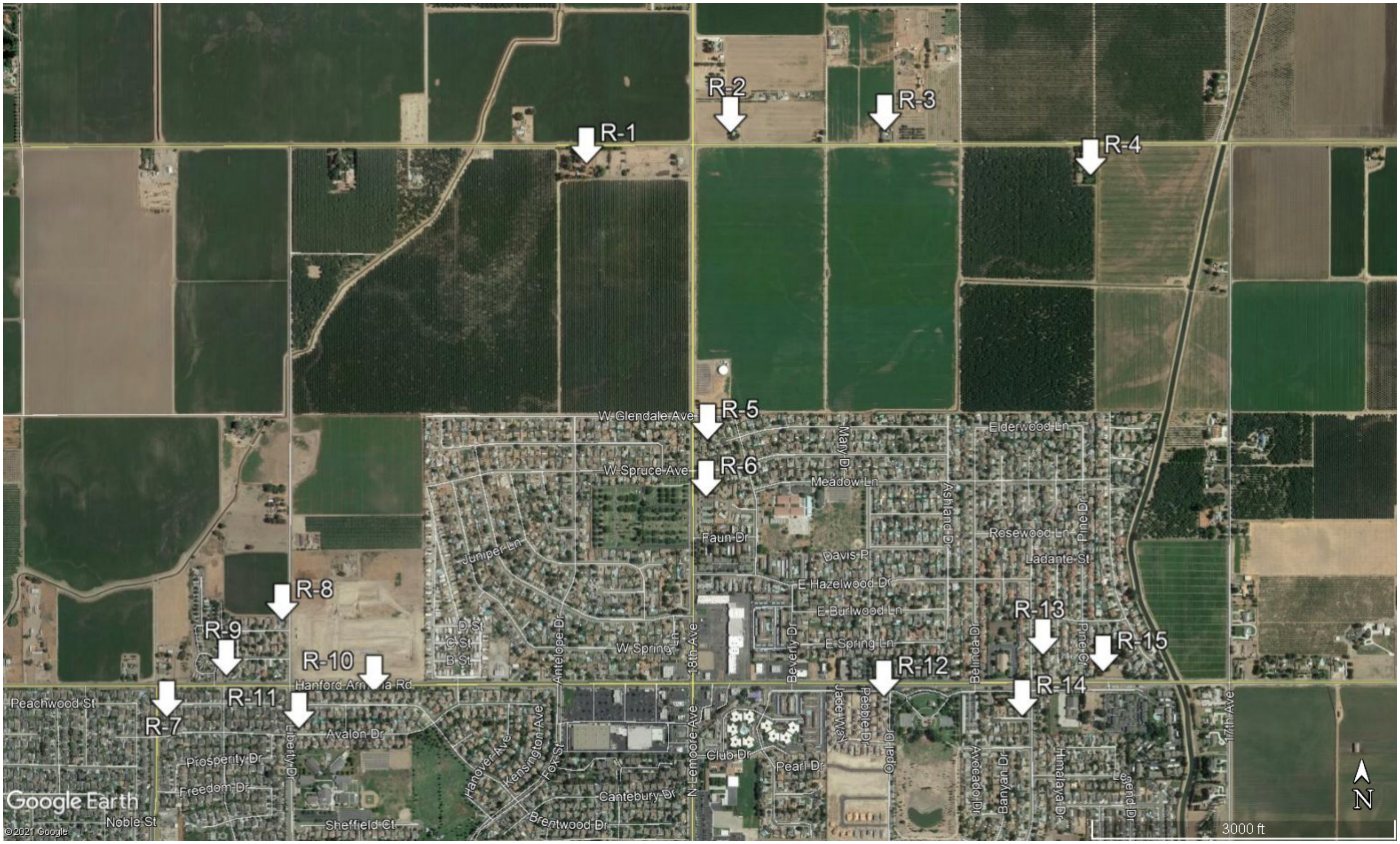


**FIGURE 2: PROJECT VICINITY AND AMBIENT NOISE MONITORING SITES**

## FIGURE 3: HOURLY NOISE LEVELS AT SITE LT-1



## FIGURE 4: MODELED TRAFFIC NOISE RECEPTOR LOCATIONS



## APPENDIX A-1

## ACOUSTICAL TERMINOLOGY

**AMBIENT NOISE LEVEL:** The composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

**CNEL:** Community Noise Equivalent Level. The average equivalent sound level during a 24-hour day, obtained after addition of approximately five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and ten decibels to sound levels in the night before 7:00 a.m. and after 10:00 p.m.

**DECIBEL, dB:** A unit for describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).

**DNL/$L_{dn}$:** Day/Night Average Sound Level. The average equivalent sound level during a 24-hour day, obtained after addition of ten decibels to sound levels in the night after 10:00 p.m. and before 7:00 a.m.

**$L_{eq}$:** Equivalent Sound Level. The sound level containing the same total energy as a time varying signal over a given sample period. $L_{eq}$ is typically computed over 1, 8 and 24-hour sample periods.

**NOTE:** The CNEL and DNL represent daily levels of noise exposure averaged on an annual basis, while $L_{eq}$ represents the average noise exposure for a shorter time period, typically one hour.

**$L_{max}$:** The maximum noise level recorded during a noise event.

**$L_n$:** The sound level exceeded "n" percent of the time during a sample interval ($L_{90}$, $L_{50}$, $L_{10}$, etc.). For example, $L_{10}$ equals the level exceeded 10 percent of the time.

## A-2

## ACOUSTICAL TERMINOLOGY

**NOISE EXPOSURE CONTOURS:** Lines drawn about a noise source indicating constant levels of noise exposure. CNEL and DNL contours are frequently utilized to describe community exposure to noise.

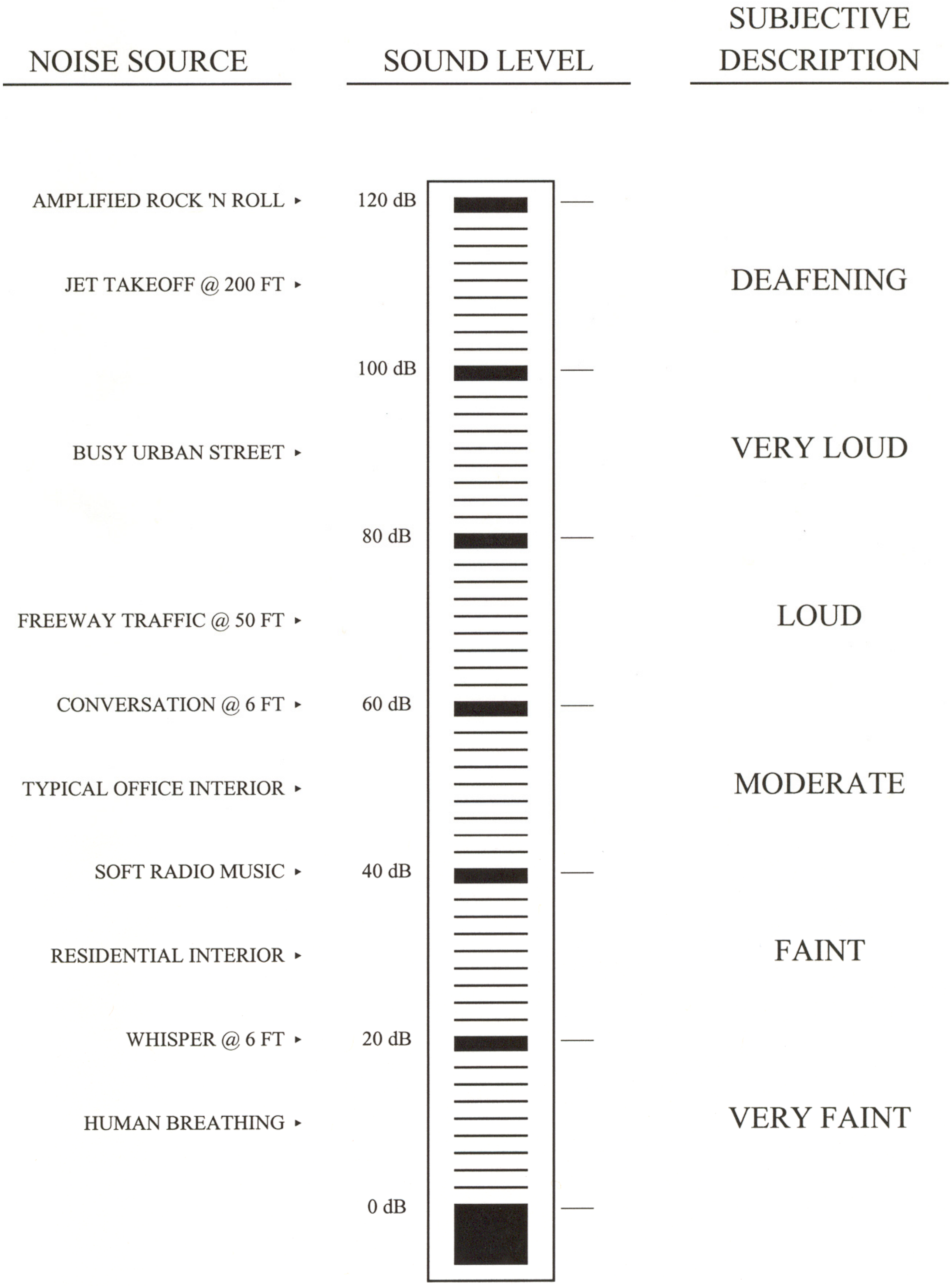
**NOISE LEVEL REDUCTION (NLR)**: The noise reduction between indoor and outdoor environments or between two rooms that is the numerical difference, in decibels, of the average sound pressure levels in those areas or rooms. A measurement of "noise level reduction" combines the effect of the transmission loss performance of the structure plus the effect of acoustic absorption present in the receiving room.

**SEL or SENEL:** Sound Exposure Level or Single Event Noise Exposure Level. The level of noise accumulated during a single noise event, such as an aircraft overflight, with reference to a duration of one second. More specifically, it is the time-integrated A-weighted squared sound pressure for a stated time interval or event, based on a reference pressure of 20 micropascals and a reference duration of one second.

**SOUND LEVEL:** The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear and gives good correlation with subjective reactions to noise.

**SOUND TRANSMISSION CLASS (STC):** The single-number rating of sound transmission loss for a construction element (window, door, etc.) over a frequency range where speech intelligibility largely occurs.

# APPENDIX B
## EXAMPLES OF SOUND LEVELS



# APPENDIX C

# TRAFFIC NOISE MODELING CALCULATIONS

**WJV Acoustics, Inc**
**FHWA-RD-77-108**
**Calculation Sheets**
June 15, 2021

| | |
|---|---|
| Project #: | 20-046 |
| Description: | Existing |
| Ldn/Cnel: | Ldn |
| Site Type: | Soft |

| **Contour Levels (dB)** | 60 | 65 | 70 | 75 | | | | | |
|---|---|---|---|---|---|---|---|---|---|

| Segment | Roadway Name | Segment Description | ADT | %Day | %Evening | %Night | %Med | %Heavy | Speed | Distance | Offset |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Lacey Blvd R-1 | w/o 18th Ave | 3440 | 90 | | 10 | 2 | 1 | 45 | 190 | |
| 2 | Lacey Blvd R-2 | e/o 18th Ave | 4360 | 90 | | 10 | 2 | 1 | 45 | 115 | |
| 3 | Lacey Blvd R-3 | e/o Mary Dr | 4370 | 90 | | 10 | 2 | 1 | 45 | 125 | |
| 4 | Lacey Blvd R-4 | w/o 17th St | 4370 | 90 | | 10 | 2 | 1 | 45 | 320 | |
| 5 | 18th Ave R-5 | s/o Glendale Ave | 5410 | 90 | | 10 | 2 | 1 | 35 | 135 | |
| 6 | 18th Ave R-6 | s/o Spruce Ave | 5720 | 90 | | 10 | 2 | 1 | 35 | 125 | |
| 7 | 19th Ave R-7 | s/o Hanford Armona Rd | 3000 | 90 | | 10 | 2 | 1 | 35 | 90 | |
| 8 | Liberty Dr R-8 | n/o Hanford Armona Rd | 2160 | 90 | | 10 | 2 | 1 | 35 | 90 | |
| 9 | Hanford Armona Rd R-9 | w/o Liberty Dr | 7890 | 90 | | 10 | 2 | 1 | 35 | 90 | |
| 10 | Hanford Armona Rd R-10 | e/o Liberty Dr | 7410 | 90 | | 10 | 2 | 1 | 35 | 70 | |
| 11 | Liberty Dr R-11 | s/o Hanford Armona Rd | 1480 | 90 | | 10 | 2 | 1 | 35 | 80 | |
| 12 | Hanford Armona Rd R-12 | w/o Cinnamon Dr | 8390 | 90 | | 10 | 2 | 1 | 35 | 150 | |
| 13 | Cinnamon Dr R-13 | n/o Hanford Armona Rd | 2130 | 90 | | 10 | 2 | 1 | 35 | 120 | |
| 14 | Cinnamon Dr R-14 | s/o Hanford Armona Rd | 3340 | 90 | | 10 | 2 | 1 | 35 | 75 | |
| 15 | Hanford Armona Rd R-15 | e/o Cinnaom Dr | 9400 | 90 | | 10 | 2 | 1 | 35 | 90 | |

**WJV Acoustics, Inc**
**FHWA-RD-77-108**
**Calculation Sheets**
June 15, 2021

Project #: 20-046
Description: Existing + project
Ldn/Cnel: Ldn
Site Type: Soft

**Contour Levels (dB)**: 60 | 65 | 70 | 75

| Segment | Roadway Name | Segment Description | ADT | %Day | %Evening | %Night | %Med | %Heavy | Speed | Distance | Offset |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Lacey Blvd R-1 | w/o 18th Ave | 3660 | 90 | | 10 | 2 | 1 | 45 | 190 | |
| 2 | Lacey Blvd R-2 | e/o 18th Ave | 4890 | 90 | | 10 | 2 | 1 | 45 | 115 | |
| 3 | Lacey Blvd R-3 | e/o Mary Dr | 5960 | 90 | | 10 | 2 | 1 | 45 | 125 | |
| 4 | Lacey Blvd R-4 | w/o 17th St | 5960 | 90 | | 10 | 2 | 1 | 45 | 320 | |
| 5 | 18th Ave R-5 | s/o Glendale Ave | 10060 | 90 | | 10 | 2 | 1 | 35 | 135 | |
| 6 | 18th Ave R-6 | s/o Spruce Ave | 10100 | 90 | | 10 | 2 | 1 | 35 | 125 | |
| 7 | 19th Ave R-7 | s/o Hanford Armona Rd | 3070 | 90 | | 10 | 2 | 1 | 35 | 90 | |
| 8 | Liberty Dr R-8 | n/o Hanford Armona Rd | 2210 | 90 | | 10 | 2 | 1 | 35 | 90 | |
| 9 | Hanford Armona Rd R-9 | w/o Liberty Dr | 8590 | 90 | | 10 | 2 | 1 | 35 | 90 | |
| 10 | Hanford Armona Rd R-10 | e/o Liberty Dr | 8200 | 90 | | 10 | 2 | 1 | 35 | 70 | |
| 11 | Liberty Dr R-11 | s/o Hanford Armona Rd | 1540 | 90 | | 10 | 2 | 1 | 35 | 80 | |
| 12 | Hanford Armona Rd R-12 | w/o Cinnamon Dr | 8890 | 90 | | 10 | 2 | 1 | 35 | 150 | |
| 13 | Cinnamon Dr R-13 | n/o Hanford Armona Rd | 2190 | 90 | | 10 | 2 | 1 | 35 | 120 | |
| 14 | Cinnamon Dr R-14 | s/o Hanford Armona Rd | 3580 | 90 | | 10 | 2 | 1 | 35 | 75 | |
| 15 | Hanford Armona Rd R-15 | e/o Cinnaom Dr | 9700 | 90 | | 10 | 2 | 1 | 35 | 90 | |

**WJV Acoustics, Inc**
**FHWA-RD-77-108**
**Calculation Sheets**
June 15, 2021

Project #: 20-046
Description: 2040
Ldn/Cnel: Ldn
Site Type: Soft

**Contour Levels (dB)** 60 65 70 75

| Segment | Roadway Name | Segment Description | ADT | %Day | %Evening | %Night | %Med | %Heavy | Speed | Distance | Offset |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Lacey Blvd R-1 | w/o 18th Ave | 3870 | 90 | | 10 | 2 | 1 | 45 | 190 | |
| 2 | Lacey Blvd R-2 | e/o 18th Ave | 5160 | 90 | | 10 | 2 | 1 | 45 | 115 | |
| 3 | Lacey Blvd R-3 | e/o Mary Dr | 5170 | 90 | | 10 | 2 | 1 | 45 | 125 | |
| 4 | Lacey Blvd R-4 | w/o 17th St | 5170 | 90 | | 10 | 2 | 1 | 45 | 320 | |
| 5 | 18th Ave R-5 | s/o Glendale Ave | 5690 | 90 | | 10 | 2 | 1 | 35 | 135 | |
| 6 | 18th Ave R-6 | s/o Spruce Ave | 5790 | 90 | | 10 | 2 | 1 | 35 | 125 | |
| 7 | 19th Ave R-7 | s/o Hanford Armona Rd | 4090 | 90 | | 10 | 2 | 1 | 35 | 90 | |
| 8 | Liberty Dr R-8 | n/o Hanford Armona Rd | 3430 | 90 | | 10 | 2 | 1 | 35 | 90 | |
| 9 | Hanford Armona Rd R-9 | w/o Liberty Dr | 10030 | 90 | | 10 | 2 | 1 | 35 | 90 | |
| 10 | Hanford Armona Rd R-10 | e/o Liberty Dr | 9150 | 90 | | 10 | 2 | 1 | 35 | 70 | |
| 11 | Liberty Dr R-11 | s/o Hanford Armona Rd | 1950 | 90 | | 10 | 2 | 1 | 35 | 80 | |
| 12 | Hanford Armona Rd R-12 | w/o Cinnamon Dr | 9350 | 90 | | 10 | 2 | 1 | 35 | 150 | |
| 13 | Cinnamon Dr R-13 | n/o Hanford Armona Rd | 2220 | 90 | | 10 | 2 | 1 | 35 | 120 | |
| 14 | Cinnamon Dr R-14 | s/o Hanford Armona Rd | 3800 | 90 | | 10 | 2 | 1 | 35 | 75 | |
| 15 | Hanford Armona Rd R-15 | e/o Cinnaom Dr | 11070 | 90 | | 10 | 2 | 1 | 35 | 90 | |

**WJV Acoustics, Inc**
**FHWA-RD-77-108**
**Calculation Sheets**
June 15, 2021

| | | | |
|---|---|---|---|
| Project #: | 20-046 | | |
| Description: | 2040 + project | | |
| Ldn/Cnel: | Ldn | | |
| Site Type: | Soft | | |

**Contour Levels (dB)**: 60 | 65 | 70 | 75

| Segment | Roadway Name | Segment Description | ADT | %Day | %Evening | %Night | %Med | %Heavy | Speed | Distance | Offset |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Lacey Blvd R-1 | w/o 18th Ave | 4090 | 90 | | 10 | 2 | 1 | 45 | 190 | |
| 2 | Lacey Blvd R-2 | e/o 18th Ave | 5790 | 90 | | 10 | 2 | 1 | 45 | 115 | |
| 3 | Lacey Blvd R-3 | e/o Mary Dr | 6760 | 90 | | 10 | 2 | 1 | 45 | 125 | |
| 4 | Lacey Blvd R-4 | w/o 17th St | 6760 | 90 | | 10 | 2 | 1 | 45 | 320 | |
| 5 | 18th Ave R-5 | s/o Glendale Ave | 10340 | 90 | | 10 | 2 | 1 | 35 | 135 | |
| 6 | 18th Ave R-6 | s/o Spruce Ave | 10370 | 90 | | 10 | 2 | 1 | 35 | 125 | |
| 7 | 19th Ave R-7 | s/o Hanford Armona Rd | 4160 | 90 | | 10 | 2 | 1 | 35 | 90 | |
| 8 | Liberty Dr R-8 | n/o Hanford Armona Rd | 3480 | 90 | | 10 | 2 | 1 | 35 | 90 | |
| 9 | Hanford Armona Rd R-9 | w/o Liberty Dr | 10730 | 90 | | 10 | 2 | 1 | 35 | 90 | |
| 10 | Hanford Armona Rd R-10 | e/o Liberty Dr | 9940 | 90 | | 10 | 2 | 1 | 35 | 70 | |
| 11 | Liberty Dr R-11 | s/o Hanford Armona Rd | 2010 | 90 | | 10 | 2 | 1 | 35 | 80 | |
| 12 | Hanford Armona Rd R-12 | w/o Cinnamon Dr | 10350 | 90 | | 10 | 2 | 1 | 35 | 150 | |
| 13 | Cinnamon Dr R-13 | n/o Hanford Armona Rd | 2280 | 90 | | 10 | 2 | 1 | 35 | 120 | |
| 14 | Cinnamon Dr R-14 | s/o Hanford Armona Rd | 3940 | 90 | | 10 | 2 | 1 | 35 | 75 | |
| 15 | Hanford Armona Rd R-15 | e/o Cinnaom Dr | 11370 | 90 | | 10 | 2 | 1 | 35 | 90 | |
| 16 | 18th Avenue | s/o Lacey Blvd. | 7010 | 90 | | 10 | 2 | 1 | 35 | 90 | |
| 17 | 18th Ave | n/o Glendale Ave | 10090 | 90 | | 10 | 2 | 1 | 35 | 90 | |

# APPENDIX I

# Draft Traffic Impact Analysis

## Lacey Ranch Development

**Located on the Southeast Corner of Lemoore Avenue and Lacey Boulevard**

**In the City of Lemoore, California**

***Prepared for:***

Crawford & Bowen Planning, Inc.
113 N. Church Street, Suite 302
Visalia, CA 93291

June 23, 2021

Project No. 039-003

JLB TRAFFIC ENGINEERING, INC.

*Traffic Engineering, Transportation Planning, & Parking Solutions*
516 W. Shaw Ave., Ste. 103
Fresno, CA 93704
Phone: (559) 570-8991
www.JLBtraffic.com

# Draft Traffic Impact Analysis

## For the Lacey Ranch Development located on the Southeast Corner of Lemoore Avenue and Lacey Boulevard

In the City of Lemoore, CA

June 23, 2021

This Draft Traffic Impact Analysis has been prepared under the direction of a licensed Traffic Engineer. The licensed Traffic Engineer attests to the technical information contained therein and has judged the qualifications of any technical specialists providing engineering data from which recommendations, conclusions, and decisions are based.

Prepared by:

__________________________________


Jose Luis Benavides, PE, TE

President


REGISTERED PROFESSIONAL ENGINEER
JOSE LUIS BENAVIDES
No.T 2328
Exp:06/30/23
TRAFFIC
STATE OF CALIFORNIA


JLB TRAFFIC ENGINEERING, INC.

*Traffic Engineering, Transportation Planning, & Parking Solutions*

516 W. Shaw Ave., Ste. 103

Fresno, CA 93704

Phone: (559) 570-8991

www.JLBtraffic.com

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# Introduction and Summary

## Introduction

This report describes a Draft Traffic Impact Analysis (TIA) prepared by JLB Traffic Engineering, Inc. (JLB) for the Lacey Ranch Development (Project) located on the southeast corner of Lemoore Avenue and Lacey Boulevard in the City of Lemoore. The Project proposes to develop approximately 156-acres with single family residential units, multifamily units and parks. The project description states this development will be limited to a maximum of 825 housing units. Based on information provided to JLB, the Project will go through the preparation of an Environmental Impact Report through the City of Lemoore. Figure 1 shows the location of the proposed Project site relative to the surrounding roadway network.

The purpose of this TIA is to evaluate the potential on-site and off-site traffic impacts, identify short-term roadway and circulation needs, determine potential mitigation measures and identify any critical traffic issues that should be addressed in the on-going planning process. The TIA primarily focused on evaluating traffic conditions at study intersections that may potentially be impacted by the proposed Project. The Scope of Work was prepared via consultation with City of Lemoore, County of Kings and Caltrans staff.

## Summary

The potential traffic impacts of the proposed Project were evaluated in accordance with the standards set forth by the Level of Service (LOS) policy of the City of Lemoore and County of Kings.

### *Existing Traffic Conditions*

- At present, all study intersections operate at an acceptable LOS during both peak periods.

### *Existing plus Project Traffic Conditions*

- The Project proposes to develop approximately 156-acres with single family residential units, multifamily units and parks.
- JLB analyzed the location of the proposed access points relative to the existing local roads and driveways in the Project's vicinity. A review of the Project access points indicates that they are located at points that minimize traffic operational impacts to the existing roadway network.
- The proposed Project is estimated to generate a maximum of 7,362 daily trips, 554 AM peak hour trips and 730 PM peak hour trips.
- It is recommended that the Project implement a Class II Bike Lane along its frontages to Lemoore Avenue, Lacey Boulevard, Street 'S' and Mary Drive between Street 'I' and Lacey Boulevard in order to encourage multi modal transportation and reduce VMT.
- It is recommended that the Project implement ADA compliant walkways along its frontages to Lemoore Avenue, Lacey Boulevard and the Project's internal streets in order to encourage multi model transportation and reduce VMT.
- Under this scenario, all study intersections are projected to operate at an acceptable LOS during both peak periods.

### *Near Term plus Project Traffic Conditions*

- The total trip generation for the Near Term Projects is 16,621 daily trips, 1,625 AM peak hour trips and 1,455 PM peak hour trips.
- Under this scenario, the study intersection of Liberty Drive and Hanford-Armona Road is projected to operate at an unacceptable LOS during the AM peak period. To improve the LOS at this intersection, the modification of the traffic control mechanism is recommended. Additional details as to the recommended improvement are presented later in this Report.

### *Cumulative Year 2042 No Project Traffic Conditions*

- Under this scenario, the study intersection of Liberty Drive and Hanford-Armona Road is projected to operate at an unacceptable LOS during the AM peak period. To improve the LOS at this intersection, the modification of the traffic control mechanism is recommended. Additional details as to the recommended improvement are presented later in this Report.

### *Cumulative Year 2042 plus Project Traffic Conditions*

- Under this scenario, the study intersection of Liberty Drive and Hanford-Armona Road is projected to operate at an unacceptable LOS during both peak periods. To improve the LOS at this intersection, the modification of the traffic control mechanism is recommended. Additional details as to the recommended improvement are presented later in this Report.

### *Queuing Analysis*

- It is recommended that the City consider left-turn and right-turn lane storage lengths as indicated in the Queuing Analysis.

## Scope of Work

The TIA primarily focused on evaluating traffic conditions at study intersections that may potentially be impacted by the proposed Project. On July 7, 2020, a Draft Scope of Work for the preparation of a Traffic Impact Analysis for this Project was provided to the City of Lemoore, County of Kings and Caltrans for their review and comment. Any comments to the Draft Scope of Work were to be provided by July 28, 2020.

On August 5, 2020 the County of Kings accepted the Draft Scope of Work as presented. On August 6, 2020 the City of Lemoore responded to the Draft Scope of Work commenting to verify the inclusion of a vehicle miles traveled (VMT) analysis and editing the list of near term projects in the city. On August 31, 2020 Caltrans responded to the Draft Scope of Work with no comments pertaining to the contents of the Draft Scope of Work; however, Caltrans did suggest the Project proponent work further with the City of Lemoore in order to reduce VMT by offering different modes of transportation. These suggestions for different modes of transportation in the vicinity of the Project.

Based on comments received, this TIA includes a VMT analysis and the near term projects requested by the City. Suggestions for different modes of transportation from Caltrans will be noted as well. The Draft Scope of Work and the comments received from the lead agency and responsible agencies are included in Appendix A.

## Study Facilities

The study focused on evaluating traffic conditions at the existing study intersections that may potentially be impacted by the proposed Project. The COVID-19 situation impacted traffic volumes in Lemoore for which new physical counts would not be representative to typical conditions. For this reason, JLB obtained historic and current turning movement counts for the study intersections of 19th Avenue and Hanford-Armona Road and Liberty Drive and Hanford-Armona Road. The historic turning movement counts were conducted in May 2019 and the new turning movement counts were conducted in October 2020. All of the intersection turning movement counts include pedestrian and bicycles volumes. When the historical and current counts were compared, the historical count had higher volumes. In order to properly analyze the study intersections, an expansion factor between historic and current traffic counts was determined for each peak period based on methodology agreed upon with the City. The expansion factors were calculated to be 48% in the AM peak period and 8% in the PM peak period. All of the current traffic counts were then expanded by these factors in their respective peaks. The volumes resulting from this process were used as the Existing turning movement volumes. The traffic counts for the existing study intersections are contained in Appendix B.

### *Study Intersections*

1. 18 ¾ Avenue / Lacey Boulevard
2. Lemoore Avenue / Lacey Boulevard
3. Mary Drive / Lacey Boulevard
4. 17$^{th}$ Avenue (North Leg) / Lacey Boulevard
5. 17$^{th}$ Avenue (South Leg) / Lacey Boulevard
6. Lemoore Avenue / Project Driveway
7. Lemoore Avenue / Glendale Avenue
8. Lemoore Avenue / Spruce Avenue
9. 19$^{th}$ Avenue / Hanford-Armona Road
10. Liberty Drive / Hanford-Armona Road
11. Cinnamon Drive / Hanford-Armona Road

### *Project Only Trip Assignment to State Facilities*

1. State Route 41 / Lacey Boulevard
2. State Route 41 / Hanford-Armona Road

## Study Scenarios

### *Existing Traffic Conditions*

This scenario evaluates the Existing Traffic Conditions based on existing traffic volumes and roadway conditions from traffic counts and field surveys conducted in October 2020. The Existing traffic volumes were based on current traffic counts conducted in October 2020 and expanded by a factor of 48% for the AM peak and 8% for the PM peak. These factors were determined by comparing the current traffic counts to traffic counts conducted in May 2019.

### *Existing plus Project Traffic Conditions*

This scenario evaluates total traffic volumes and roadway conditions based on the Existing plus Project Traffic Conditions. The Existing plus Project traffic volumes were obtained by adding the Project Only Trips to the Existing Traffic Conditions scenario. The Project Only Trips to the study facilities were developed based on the Kings CAG Select Zone, existing travel patterns, the existing roadway network, engineering judgement, data provided by the developer, knowledge of the study area, existing residential and commercial densities, anticipated school boundaries and the City of Lemoore's 2030 General Plan Circulation Element in the vicinity of the Project site.

### *Near Term plus Project Traffic Conditions*

This scenario evaluates total traffic volumes and roadway conditions based on the Near Term plus Project Traffic Conditions. The Near Term plus Project traffic volumes were obtained by adding the near term related trips to the Existing plus Project Traffic Conditions scenario.

### *Cumulative Year 2042 No Project Traffic Conditions*

This scenario evaluates total traffic volumes and roadway conditions based on the Cumulative Year 2042 No Project Traffic Conditions. The Cumulative Year 2042 No Project traffic volumes were obtained by subtracting the Project Only Trips from the Cumulative Year 2042 plus Project Traffic Conditions scenario.

### *Cumulative Year 2042 plus Project Traffic Conditions*

This scenario evaluates total traffic volumes and roadway conditions based on the Cumulative Year 2042 plus Project Traffic Conditions. JLB utilized the Kings County Association of Governments (KCAG) Base Year 2021 and Cumulative Year 2042 models to determine the increment, as recommended by the Model Steering Committee, to determine the Cumulative Year 2042 plus Project traffic volumes. The Kings CAG model results are contained in Appendix C.

## Level of Service Analysis Methodology

LOS is a qualitative index of the performance of an element of the transportation system. LOS is a rating scale running from “A” to “F”, with “A” indicating no congestion of any kind and “F” indicating unacceptable congestion and delays. LOS in this study describes the operating conditions for signalized and unsignalized intersections.

The *Highway Capacity Manual* (HCM) 6th Edition is the standard reference published by the Transportation Research Board and contains the specific criteria and methods to be used in assessing LOS. U-turn movements were analyzed using HCM 2000 methodologies and would yield more accurate results for the reason that HCM 6th Edition methodologies do not allow the analysis of U-turns. Synchro software was used to define LOS in this study. Details regarding these calculations are included in Appendix D.

## Criteria of Significance

The City of Lemoore 2030 General Plan does not currently have any adopted LOS standard. However, recent traffic studies have utilized LOS D as the acceptable level of traffic congestion. Therefore, LOS D is used to evaluate the potential significant of LOS impacts to City of Lemoore roadway facilities.

The County of Kings 2035 General Plan has established a minimum LOS standard within the County, which shall be no lower than LOS E for urban areas and LOS D for rural areas. For this TIA, LOS D is used to evaluate the potential significance of LOS impacts to intersections within the County of Kings.

Caltrans endeavors to maintain a target LOS at the transition between LOS C and D on State highway facilities consistent with the *Caltrans Guide for the Preparation of Traffic Impact Studies* dated December 2002. However, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. In this TIA, all study facilities fall within either the City of Lemoore or the County of Kings boundaries. Therefore, the City of Lemoore and the County of Kings rural LOS threshold of LOS D is utilized to evaluate the potential significance of LOS impacts.

## Operational Analysis Assumptions and Defaults

The following operational analysis values, assumptions and defaults were used in this study to ensure a consistent analysis of LOS among the various scenarios.

- Yellow time consistent with the California Manual of Uniform Traffic Control Devices (CA MUTCD) based on approach speeds
- Yellow time of 3.2 seconds for left-turn phases
- All-red clearance intervals of 1.0 second for all phases
- Walk intervals of 7.0 seconds
- Flashing Don't Walk based on 3.5 feet/second walking speed with yellow plus all-red clearance subtracted and 2.0 seconds added
- All new or modified signals utilize protective left-turn phasing
- The existing intersection heavy vehicle factor was used in its respective peak analysis.
- An average of 10 pedestrian calls per hour at signalized intersections
- The number of observed pedestrians at existing intersections was utilized under all study scenarios
- At existing intersections, the observed approach Peak Hour Factor (PHF) is utilized in all scenarios

# Existing Traffic Conditions

## Roadway Network

The Project site and surrounding study area are illustrated in Figure 1. Important roadways serving the Project are discussed below.

***State Route (SR) 41*** is an existing north-south two- to four-lane expressway adjacent to the proposed Project. State Route 41 serves as the principal connection to various metropolitan areas within the Central San Joaquin Valley and the California Central Coast. In this area, State Route 41 connects to Hanford-Armona Road.

***19th Avenue*** is an existing north-south two-lane arterial divided by a two-way left-turn lane in the vicinity of the proposed Project. In this area, $19^{th}$ Avenue is a two-lane arterial divided by a two-way left-turn lane between Hanford-Armona Road and Noble Street and a two-lane undivided arterial between Noble Street and Cinnamon Drive. The City of Lemoore 2030 General Plan aims to extend $19^{th}$ Avenue north of Hanford-Armona Road as a two-lane collector connecting to Lemoore Avenue and designates $19^{th}$ Avenue as a four-lane arterial between Hanford-Armona Road and Idaho Avenue.

***Liberty Drive (18 ¾ Avenue)*** is an existing north-south undivided two-lane local roadway in the vicinity of the proposed Project. In this area, Liberty Drive (18 ¾ Avenue) is an undivided two-lane local roadway between Lacey Boulevard and Hanford-Armona Road and a two-lane collector divided by a two-way left-turn lane between Hanford-Armona Road and Cinnamon Drive. The City of Lemoore 2030 General Plan designates Liberty Drive as a four-lane collector between Lacey Boulevard and Cinnamon Drive.

***Lemoore Avenue*** is an existing north-south undivided two-lane local roadway adjacent to the proposed Project. In this area, Lemoore Avenue is a two-lane undivided arterial north of Glendale Avenue through the City of Lemoore SOI and a two-lane arterial divided by a two-way left-turn lane between Glendale Avenue and Cinnamon Drive. The City of Lemoore 2030 General Plan designates Lemoore Avenue as an arterial north of Hanford-Armona Road through the City of Lemoore SOI and a four-lane arterial between Hanford Armona Road and Cinnamon Drive.

***$17^{th}$ Avenue*** is an existing north-south undivided two-lane local roadway in the vicinity of the proposed Project. In this area, $17^{th}$ Avenue is an undivided local roadway that runs through the City of Lemoore SOI. The City of Lemoore 2030 General Plan designates $17^{th}$ Avenue as a two-lane local roadway throughout the City of Lemoore SOI.

***Cinnamon Drive*** is an existing two-lane undivided collector in the vicinity of the proposed Project. In this area, Cinnamon Drive extends east of its connection to 19 ½ Avenue and changes orientation to intersect Hanford-Armona Road. Cinnamon Drive is a two-lane collector divided by a two-way left-turn lane between 19½ Avenue and Lemoore Avenue and a two-lane undivided collector east of Lemoore Avenue and south of Hanford-Armona Road. The City of Lemoore 2030 General Plan designates Cinnamon Drive as a four-lane collector between 19 ½ Avenue and Lemoore Avenue and a two-lane collector between Lemoore Avenue and Hanford-Armona Road.

***Lacey Boulevard*** is an existing east-west two-lane local roadway adjacent to the proposed Project. In this area, Lacey Boulevard is a two-lane undivided major collector through the County of Kings. The County of Kings 2035 General Plan designates Lacey Boulevard as a local major collector through the County of Kings.

***Glendale Avenue*** is an existing east-west two-lane undivided local roadway in the vicinity of the proposed Project. In this area, Glendale Avenue is a two-lane undivided local roadway that exists between Deodar Drive and Quandt Drive. The City of Lemoore 2030 General Plan designates Glendale Avenue as a local roadway through the City of Lemoore SOI.

***Spruce Avenue*** is an existing east-west two-lane undivided local roadway in the vicinity of the proposed Project. In this area, Spruce Avenue is a two-lane undivided local roadway that exists between Spring Lane and Ashland Drive. The City of Lemoore 2030 General Plan designates Spruce Avenue as a local roadway through the City of Lemoore SOI.

***Hanford-Armona Road*** is an existing east-west two-lane arterial in the vicinity of the proposed Project. In this area, Hanford-Armona Road is a two-lane undivided local roadway west of SR 41, a two- to three-lane arterial divided by a two-way left-turn lane between SR 41 and Lemoore Avenue, a four-lane undivided arterial between Lemoore Avenue and Cinnamon Drive and a two-lane undivided arterial east of Cinnamon Drive. The City of Lemoore 2030 General Plan designates Hanford-Armona Road as a four- to six-lane arterial between College Drive and Bennington Avenue.

## Traffic Signal Warrants

The CA MUTCD indicates that an engineering study of traffic conditions, pedestrian characteristics and physical features of an intersection shall be conducted to determine whether installation of traffic signal controls are justified. The CA MUTCD provides a total of nine (9) warrants to evaluate the need for traffic signal controls. These warrants include 1) Eight-Hour Vehicular Volume, 2) Four-Hour Vehicular Volume, 3) Peak Hour, 4) Pedestrian Volume, 5) School Crossing, 6) Coordinated Signal System, 7) Crash Experience, 8) Roadway Network and 9) Intersection Near a Grade Crossing. Signalization of an intersection may be appropriate if one or more of the signal warrants is satisfied. However, the CA MUTCD also states that "[t]he satisfaction of a signal warrant or warrants shall not in itself require the installation of a traffic control signal" (California Department of Transportation, 2020b).

If traffic signal warrants are satisfied when an LOS threshold impact is identified at an unsignalized intersection, then installation of a traffic signal control may serve as an improvement measure. For instances where traffic signal warrants are satisfied, a traffic signal control is not considered to be the default improvement measure. Since installation of a traffic signal control typically requires construction of additional lanes, an attempt was first made to improve the intersection approach lane geometrics in order to improve its LOS while maintaining the existing intersection controls. If the additional lanes did not result in acceptable LOS at the intersection, then in those cases implementation of a traffic signal control would be considered.

Warrant 3 were prepared for the unsignalized intersections under the Existing Traffic Conditions scenario. These warrants are contained in Appendix J. Under this scenario, the intersections of 19th Avenue and Hanford-Armona Road and Cinnamon Drive and Hanford-Armona Road currently meet the peak hour warrant during the PM peak period only. The remaining unsignalized study intersections do not satisfy the peak hour signal warrant during any peak period. Based on the signal warrants and engineering judgement, signalization of these intersections is not recommended, especially since these intersections operate at an acceptable LOS during both peak periods.

## Results of Existing Level of Service Analysis

Figure 2 illustrates the Existing Traffic Conditions turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Existing Traffic Conditions scenario are provided in Appendix E. Table I presents a summary of the Existing peak hour LOS at the study intersections.

At present, all study intersections operate at an acceptable LOS during both peak periods.

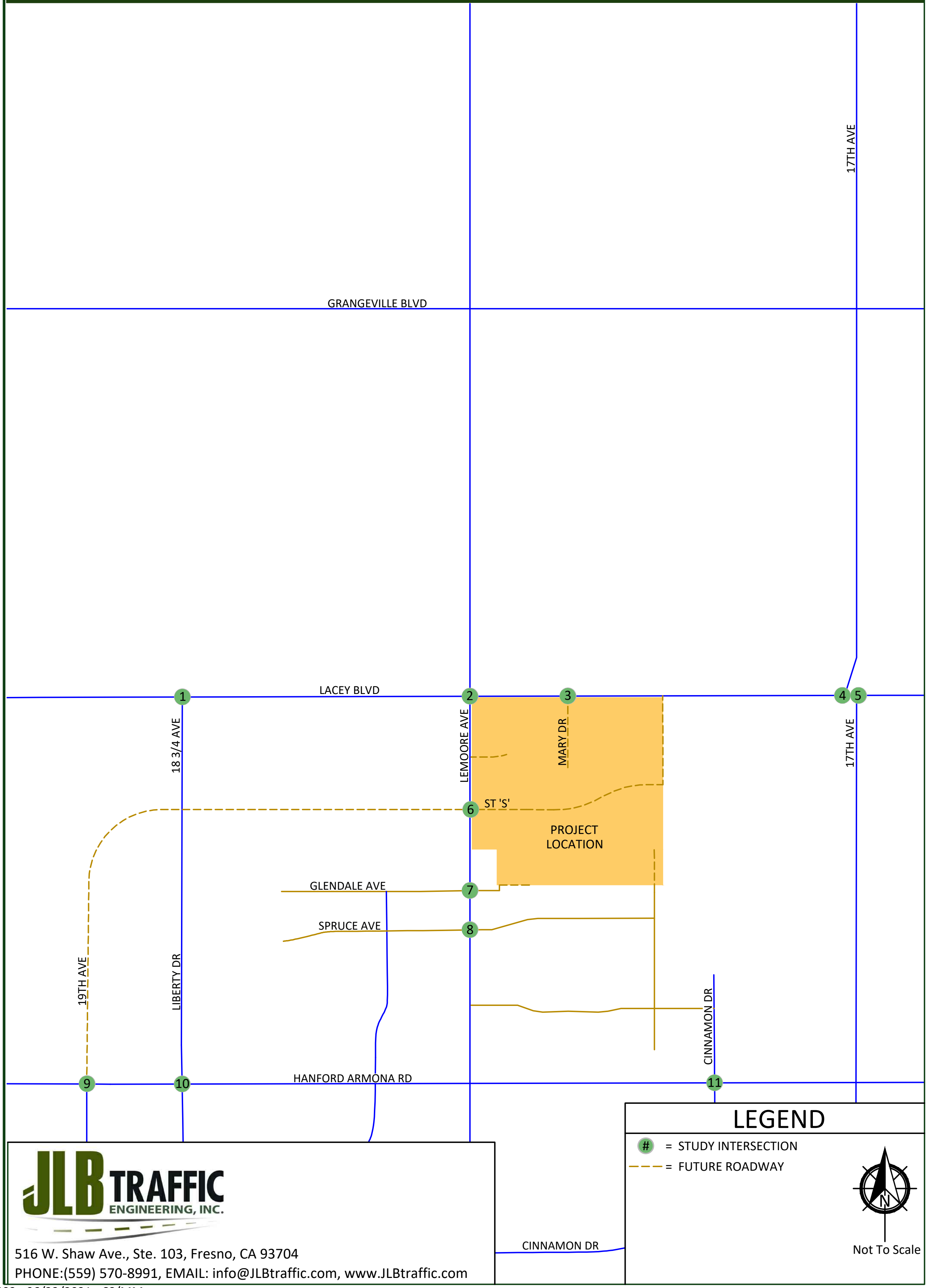
## Table I: Existing Intersection LOS Results

| ID | Intersection | Intersection Control | AM (7-9) Peak Hour | | PM (4-6) Peak Hour | |
|---|---|---|---|---|---|---|
| | | | Average Delay (sec/veh) | LOS | Average Delay (sec/veh) | LOS |
| 1 | 18 ¾ Avenue / Lacey Boulevard | One-Way Stop | 10.6 | B | 9.8 | A |
| 2 | Lemoore Avenue / Lacey Boulevard | All-Way Stop | 10.8 | B | 11.2 | B |
| 3 | Mary Drive / Lacey Boulevard | Does Not Exist | N/A | N/A | N/A | N/A |
| 4 | 17th Avenue (NL) / Lacey Boulevard | One-Way Stop | 10.2 | B | 11.1 | B |
| 5 | 17th Avenue (SL) / Lacey Boulevard | One-Way Stop | 10.3 | B | 10.6 | B |
| 6 | Lemoore Avenue / Street 'S' | Does Not Exist | N/A | N/A | N/A | N/A |
| 7 | Lemoore Avenue / Glendale Avenue | Two-Way Stop | 13.9 | B | 12.4 | B |
| 8 | Lemoore Avenue / Spruce Avenue | Two-Way Stop | 16.7 | C | 13.7 | B |
| 9 | 19th Avenue / Hanford-Armona Road | One-Way Stop | 11.6 | B | 12.4 | B |
| 10 | Liberty Drive / Hanford-Armona Road | One-Way Stop | 21.1 | C | 18.8 | C |
| 11 | Cinnamon Drive/ Hanford-Armona Road | One-Way Stop | 15.9 | C | 20.0 | C |

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

# Lacey Ranch - City of Lemoore
## Vicinity Map

Figure 1

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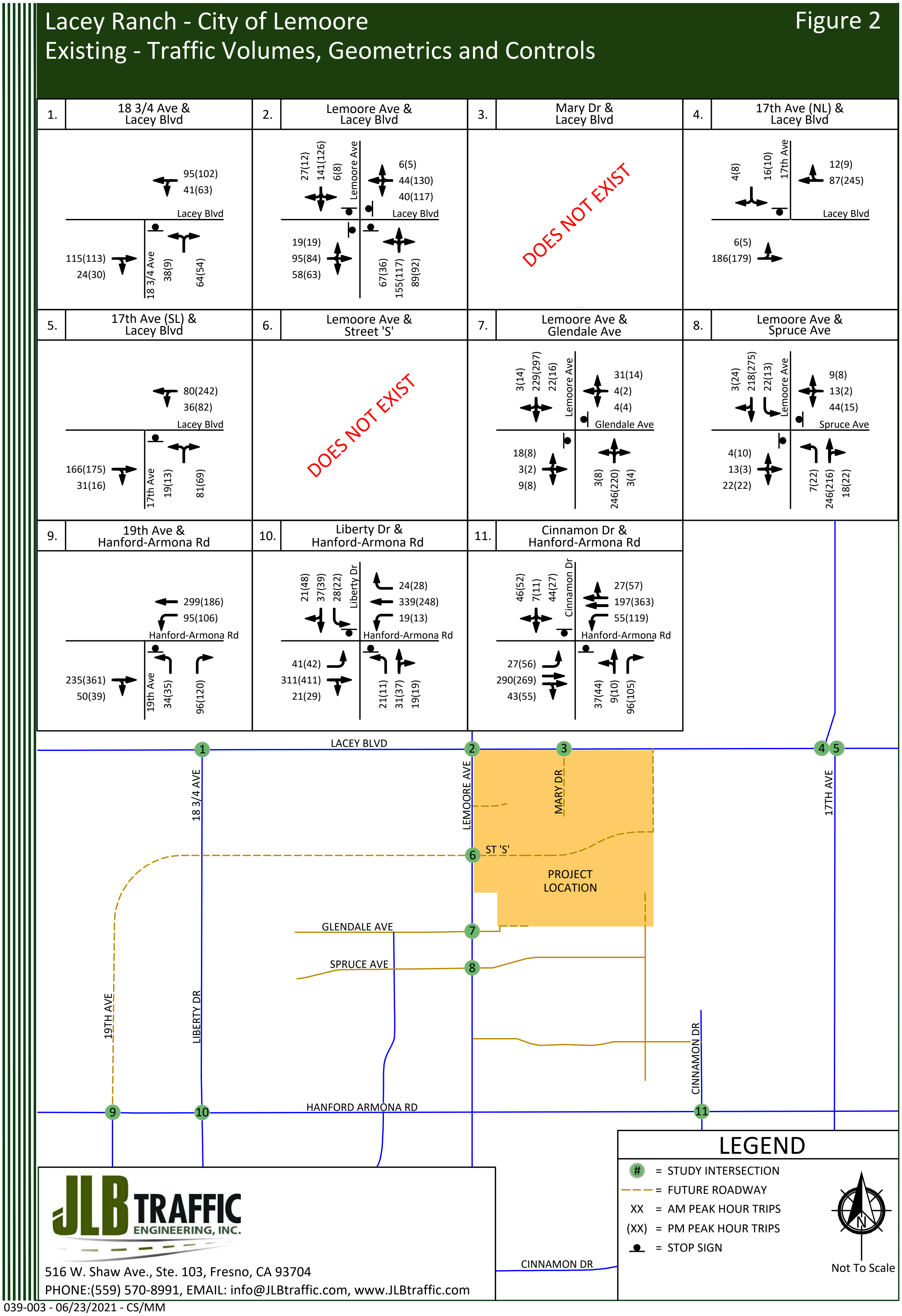
Lacey Ranch - City of Lemoore
Existing - Traffic Volumes, Geometrics and Controls
Figure 2
1. 18 3/4 Ave & Lacey Blvd
95(102)
41(63)
Lacey Blvd
115(113)
24(30)
18 3/4 Ave
38(9)
64(54)
2. Lemoore Ave & Lacey Blvd
27(12)
141(126)
6(8)
Lemoore Ave
6(5)
44(130)
40(117)
Lacey Blvd
19(19)
95(84)
58(63)
67(36)
155(117)
89(92)
3. Mary Dr & Lacey Blvd
DOES NOT EXIST
4. 17th Ave (NL) & Lacey Blvd
4(8)
16(10)
17th Ave
12(9)
87(245)
Lacey Blvd
6(5)
186(179)
5. 17th Ave (SL) & Lacey Blvd
80(242)
36(82)
Lacey Blvd
166(175)
31(16)
17th Ave
19(13)
81(69)
6. Lemoore Ave & Street 'S'
DOES NOT EXIST
7. Lemoore Ave & Glendale Ave
3(14)
229(297)
22(16)
Lemoore Ave
31(14)
4(2)
4(4)
Glendale Ave
18(8)
3(2)
9(8)
3(8)
246(220)
3(4)
8. Lemoore Ave & Spruce Ave
3(24)
218(275)
22(13)
Lemoore Ave
9(8)
13(2)
44(15)
Spruce Ave
4(10)
13(3)
22(22)
7(22)
246(216)
18(22)
9. 19th Ave & Hanford-Armona Rd
299(186)
95(106)
Hanford-Armona Rd
235(361)
50(39)
19th Ave
34(35)
96(120)
10. Liberty Dr & Hanford-Armona Rd
21(48)
37(39)
28(22)
Liberty Dr
24(28)
339(248)
19(13)
Hanford-Armona Rd
41(42)
311(411)
21(29)
21(11)
31(37)
19(19)
11. Cinnamon Dr & Hanford-Armona Rd
46(52)
7(11)
44(27)
Cinnamon Dr
27(57)
197(363)
55(119)
Hanford-Armona Rd
27(56)
290(269)
43(55)
37(44)
9(10)
96(105)
LACEY BLVD
18 3/4 AVE
LEMOORE AVE
MARY DR
17TH AVE
ST 'S'
PROJECT LOCATION
GLENDALE AVE
SPRUCE AVE
19TH AVE
LIBERTY DR
CINNAMON DR
HANFORD ARMONA RD
LEGEND
# = STUDY INTERSECTION
= FUTURE ROADWAY
XX = AM PEAK HOUR TRIPS
(XX) = PM PEAK HOUR TRIPS
= STOP SIGN
N
Not To Scale
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# Existing plus Project Traffic Conditions

## Project Description

The Project proposes to develop a 156-acre site on the southeast corner of Lemoore Avenue and Lacey Boulevard with single-family residential units, multifamily units and parks. Information within the project description declares that the project will be limited to 825 housing units. Based on information provided to JLB, the Project will go through the preparation of an Environmental Impact Report through the City of Lemoore. Figure 3 illustrates the latest Project Site Plan.

## Project Access

Based on the latest Project Site Plan, access to and from the Project site will be from eight (8) main access points in total. Two (2) of the access points will be located along the south side of Lacey Boulevard approximately 1,300 and 2,600 feet east of Lemoore Avenue and are proposed as full access. The eastmost of these two access points will initially act as an emergency access only, but will be built out as a local roadway upon completion of phase II of the Project. Three (3) of the access points will be located along the east side of Lemoore Avenue approximately 820, 1,535 and 1,885 feet south of Lacey Boulevard and are all currently proposed as full access points. One (1) of the access points will be located along the north side of Glendale approximately 345 feet east of Lemoore Avenue and is proposed as full access. One (1) of the access points will be on the south side of the Project through existing Ashland Drive. A ninth access point will be located along the east side of the Project, but will not be connected to any exterior roads at initial Project buildout. JLB analyzed the location of the proposed access points relative to the existing local roads and driveways in the Project's vicinity. A review of the Project access points to be constructed indicates that they are located at points that minimize traffic operational impacts to the existing roadway network

## Trip Generation

Trip generation rates for the proposed Project were obtained from the 10th Edition of the Trip Generation Manual published by the Institute of Transportation Engineers (ITE). Table II presents the trip generation for the proposed Project with trip generation rates for Single-Family Detached Housing (210), Multifamily Housing (Low-Rise) (220) and Public Park (411). As can be seen in Table II, the proposed Project is estimated to generate a maximum of 7,362 daily trips, 554 AM peak hour trips and 730 PM peak hour trips.

### Table II: Project Trip Generation

| ***Land Use (ITE Code)*** | ***Size*** | ***Unit*** | ***Daily*** | | ***AM (7-9) Peak Hour*** | | | | | | ***PM (4-6) Peak Hour*** | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | ***Rate*** | ***Total*** | ***Trip Rate*** | ***In %*** | ***Out %*** | ***In*** | ***Out*** | ***Total*** | ***Trip Rate*** | ***In %*** | ***Out %*** | ***In*** | ***Out*** | ***Total*** |
| Single-Family Detached Housing (210) | 621 | d.u. | 9.44 | 5,862 | 0.74 | 25 | 75 | 115 | 345 | 460 | 0.99 | 63 | 37 | 387 | 228 | 615 |
| Multifamily Housing (Low-Rise) (220) | 204 | d.u. | 7.32 | 1,493 | 0.46 | 23 | 77 | 22 | 72 | 94 | 0.56 | 63 | 37 | 72 | 42 | 114 |
| Public Park (411) | 9.540 | acres | 0.78 | 7 | 0.02 | 59 | 41 | 0 | 0 | 0 | 0.11 | 55 | 45 | 1 | 0 | 1 |
| ***Total Project Trips*** | | | | **7,362** | | | | **137** | **417** | **554** | | | | **460** | **270** | **730** |

Note: d.u. = Dwelling Units

## Trip Distribution

The trip distribution assumptions were developed based on the Kings CAG Select Zone, existing travel patterns, the existing roadway network, engineering judgement, data provided by the developer, knowledge of the study area, existing residential and commercial densities, anticipated school boundaries and the City of Lemoore's 2030 General Plan Circulation Element in the vicinity of the Project site. Figure 4 illustrates the Project Only Trips to the study intersections.

## Bikeways

Currently, Class II Bike Lanes exist in the vicinity of the proposed Project site along Hanford-Armona Road, 19$^{th}$ Avenue, Lemoore Avenue, Liberty Drive and Cinnamon Drive. The City of Lemoore 2030 General Plan and the 2011 Kings County Regional Bicycle Plan combined propose Bike Lanes on Spruce Avenue, Cinnamon Drive where they do not exist, Hanford-Armona Road where they do not exist east of SR 41 and on the entirety of the 19$^{th}$ Avenue expansion north of Hanford-Armona Road. Therefore, it is recommended that the Project implement a Class II bike lane along its frontages to Lemoore Avenue, Lacey Boulevard, Street 'S' and Mary Drive between Street 'I' and Lacey Boulevard. By implementing this recommendation, the City will be promoting alternative modes of transportation to and from the Project as well as reduce VMT.

## Walkways

Currently, walkways exist in the vicinity of the proposed Project site along Hanford-Armona Road, the south side of Glendale Avenue, Spruce Avenue, 19$^{th}$ Avenue, Liberty Drive, Lemoore Avenue and Cinnamon Drive. A goal of the 2011 Kings County Regional Bicycle Plan is to provide for pedestrian-friendly zones in conjunction with the development, redevelopment, and design of mixed-use neighborhood core areas, the Downtown area, schools, parks, and other high use areas. Therefore, it is recommended that the Project implement ADA compliant walkways along its frontages to Lemoore Avenue, Lacey Boulevard and the Project's internal roads. By implementing this recommendation, the City will be promoting alternative modes of transportation to and from the Project as well as reduce VMT.

## Transit

Kings Area Rural Transit (KART), the transit operator in the City of Lemoore, provides fixed-route service. At present, there are no KART fixed routes that operate in the vicinity of the proposed Project. The closest is KART Route 20 – Lemoore, which runs on Hanford-Armona Road, approximately 0.71 miles to the southwest corner of the proposed Project. Route 20 operates at 30-minute intervals on Monday through Friday from 6:05 AM to 5:35 PM and 30-minute intervals on Saturday from 9:35 AM to 3:35 PM. The nearest stop to the Project site is located on the north side of Hanford-Armona Road approximately 575 feet east of Lemoore Avenue. This Route provides a direct connection to the KART Transit Center, Armona Senior Center, Heritage Park, Pioneer Square, Lemoore High School, City Park, Lemoore Depot and Liberty Middle school. Retention of the existing and expansion of future transit routes is dependent of transit ridership demand and available funding.

## Traffic Signal Warrants

Peak hour traffic signal warrants, as appropriate, were prepared for the unsignalized intersections in the Existing plus Project Traffic Conditions scenario. These warrants are found in Appendix J.

Under this scenario, the intersections of Lemoore Avenue and Lacey Boulevard, Lemoore Avenue and Street "S", Liberty Drive and Hanford-Armona Road and Cinnamon Drive and Hanford-Armona Road are projected to meet the peak hour warrant during the PM peak period only. The intersection of 19th Avenue and Hanford-Armona Road is projected meet the peak hour warrant during both peak periods. The remaining unsignalized study intersections do not satisfy the peak hour signal warrant during any peak period.

Based on the traffic signal warrants, operational analysis and engineering judgment, it is not recommended that the City consider implementing traffic signal controls at any of the unsignalized study intersections especially since these are projected to operate at an acceptable LOS during both peak periods under stop sign control. It is worth noting that the CA MUTCD states "satisfaction of a signal warrant or warrants shall not in itself require the installation of a traffic signal." Therefore, it is recommended that prior to the installation of a traffic signal, investigation of CA MUTCD warrants 4 and 7, as applicable, be conducted for these intersections.

## Results of Existing plus Project Level of Service Analysis

The Existing plus Project Traffic Conditions scenario assumes that internal streets including Mary Drive and Street 'S' get added to the roadway network. It is also assumed that additions include a westbound left-turn lane at the intersection of Mary Drive and Lacey Boulevard and a two-way left-turn lane along Lemoore Avenue between Lacey Boulevard and approximately 600 feet north of Glendale Avenue. Figure 5 illustrates the Existing plus Project turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Existing plus Project Traffic Conditions scenario are provided in Appendix F. Table III presents a summary of the Existing plus Project peak hour LOS at the study intersections.

Under this scenario, all study intersections are projected to operate at an acceptable LOS during both peak periods.

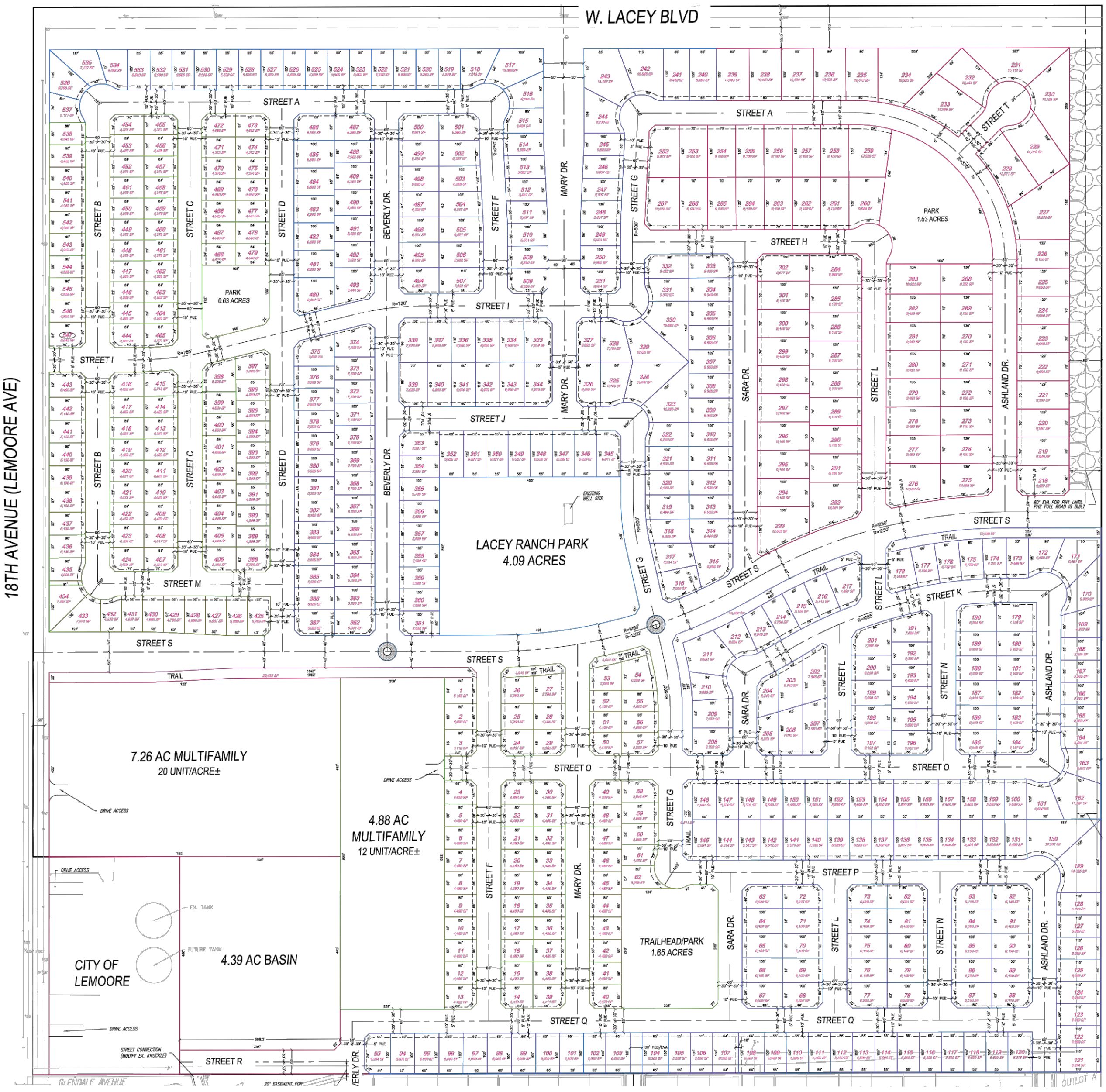
## Table III: Existing plus Project Intersection LOS Results

| ID | Intersection | Intersection Control | AM (7-9) Peak Hour | | PM (4-6) Peak Hour | |
|---|---|---|---|---|---|---|
| | | | Average Delay (sec/veh) | LOS | Average Delay (sec/veh) | LOS |
| 1 | 18 ¾ Avenue / Lacey Boulevard | One-Way Stop | 10.7 | B | 9.9 | A |
| 2 | Lemoore Avenue / Lacey Boulevard | All-Way Stop | 11.4 | B | 12.3 | B |
| 3 | Mary Drive / Lacey Boulevard | One-Way Stop | 10.1 | B | 10.4 | B |
| 4 | 17th Avenue / Lacey Boulevard (North Leg) | One-Way Stop | 11.0 | B | 12.5 | B |
| 5 | 17th Avenue / Lacey Boulevard (South Leg) | One-Way Stop | 11.2 | B | 11.9 | B |
| 6 | Lemoore Avenue / Street S | One-Way Stop | 13.7 | B | 14.5 | B |
| 7 | Lemoore Avenue / Glendale Avenue | Two-Way Stop | 21.2 | C | 23.0 | C |
| 8 | Lemoore Avenue / Spruce Avenue | Two-Way Stop | 30.2 | D | 23.8 | C |
| 9 | 19th Avenue / Hanford-Armona Road | One-Way Stop | 11.8 | B | 12.9 | B |
| 10 | Liberty Drive / Hanford-Armona Road | Two-Way Stop | 23.9 | C | 20.6 | C |
| 11 | Cinnamon Drive / Hanford-Armona Road | Two-Way Stop | 16.4 | C | 20.6 | C |

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

# Lacey Ranch - City of Lemoore
## Project Site Plan

Figure 3

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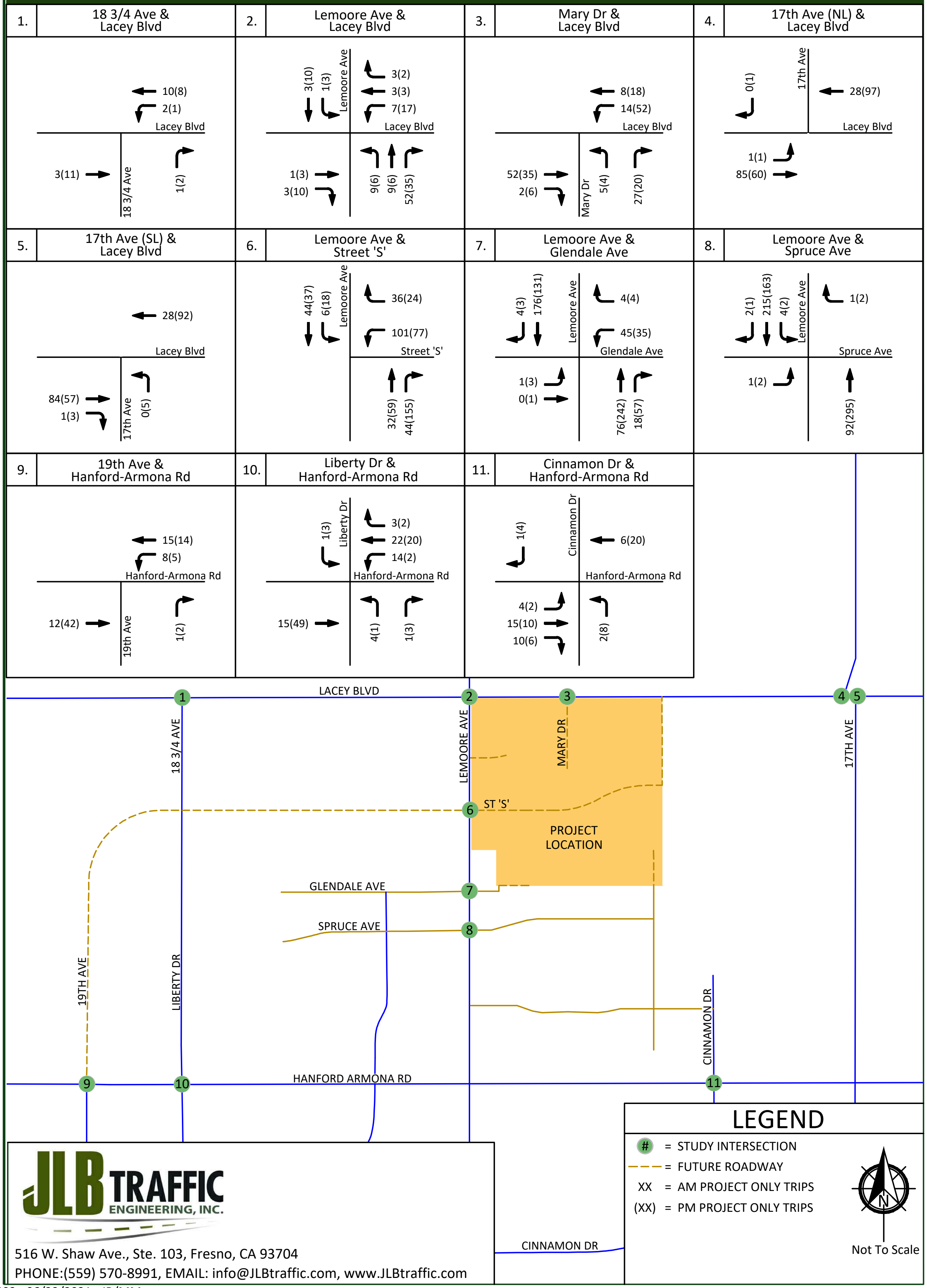
# Lacey Ranch - City of Lemoore
# Project Only Trips

Figure 4

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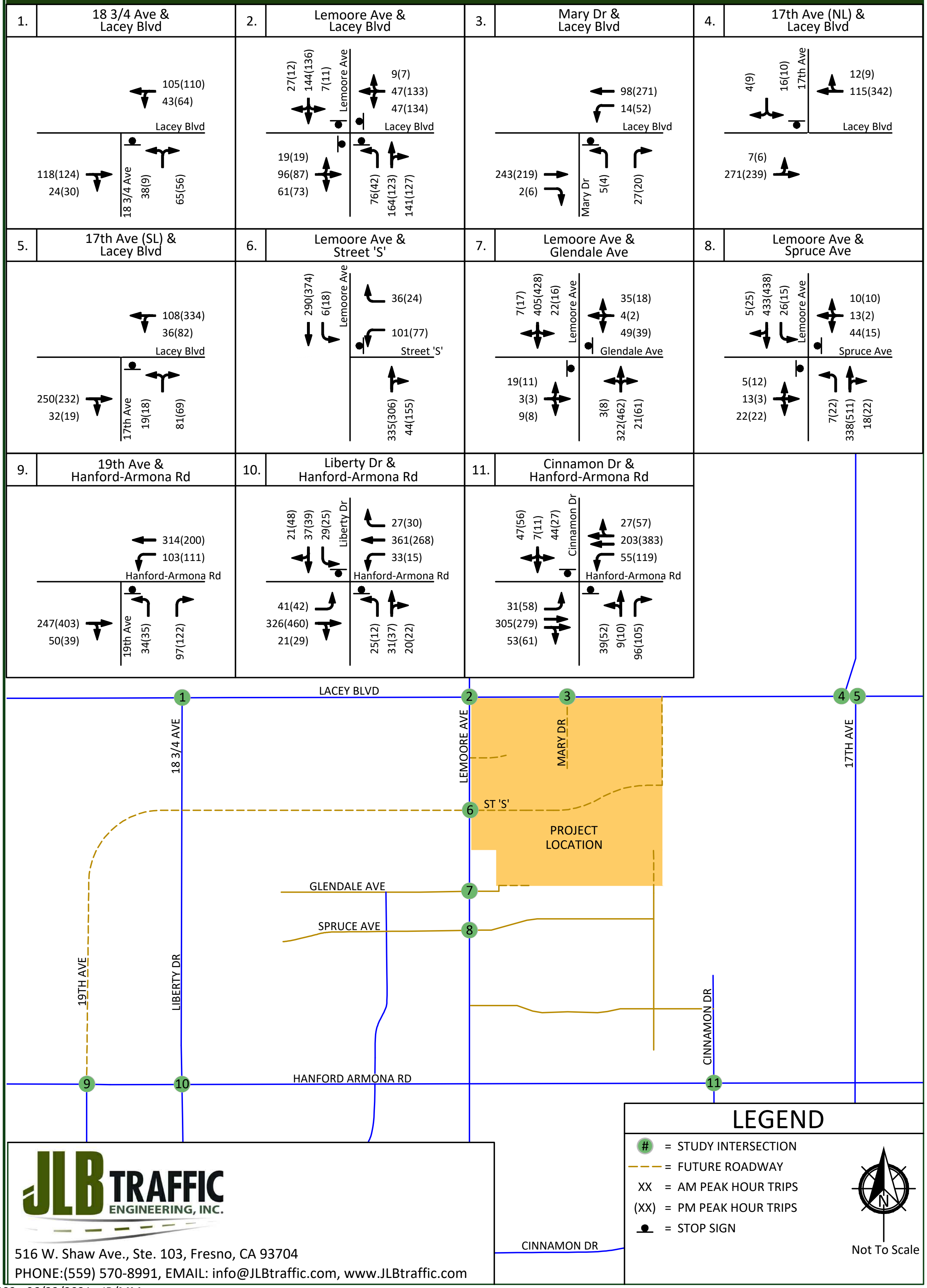
# Lacey Ranch - City of Lemoore

## Existing plus Project - Traffic Volumes, Geometrics and Controls

Figure 5

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# Near Term plus Project Traffic Conditions

## Description of Approved and Pipeline Projects

Approved and Pipeline Projects consist of developments that are either under construction, built but not fully occupied, are not built but have final site development review (SDR) approval, or for which the lead agency or responsible agencies have knowledge of. The City of Lemoore, County of Kings and Caltrans staff were consulted throughout the preparation of this TIA regarding approved and/or known projects that could potentially impact the study intersections. JLB staff conducted a reconnaissance of the surrounding area to confirm the Near Term Projects. Subsequently, it was agreed that the projects listed in Table IV were approved, near approval, or in the pipeline within the proximity of the proposed Project.

The trip generation listed in Table IV is that which is anticipated to be added to the streets and highways by these projects between the time of the preparation of this report and five years after buildout of the proposed Project. As shown in Table IV, the total trip generation for the Near Term Projects is 16,621 daily trips, 1,625 AM peak hour trips and 1,455 PM peak hour trips. Figure 6 illustrates the location of the approved, near approval, or pipeline projects and their combined trip assignment to the study intersections under the Near Term plus Project Traffic Conditions scenario.

### Table IV: Near Term Projects' Trip Generation

| *Approved Project Location* | *Approved or Pipeline Project Name* | *Daily Trips* | *AM Peak Hour* | *PM Peak Hour* |
|---|---|---|---|---|
| A | Cinnamon Villas II | 104 | 6 | 7 |
| B | Dutch Bros. | 707 | 77 | 37 |
| C | Hanford-Armona Commercial | 6,775 | 471 | 488 |
| D | New Elementary School | 1,323 | 469 | 119 |
| E | Tract 848 | 3,417 | 268 | 358 |
| F | Tract 920 | 963 | 75 | 101 |
| G | Master Storage | 159 | 15 | 19 |
| H | Silva Estates #11 | 539 | 38 | 50 |
| I | Victory Village | 2,634 | 206 | 276 |
| **Total Approved and Pipeline Project Trips** | | **16,621** | **1,625** | **1,455** |

Note: 1 = Trip Generation prepared by JLB Traffic Engineering, Inc. based on readily available information
2 = Trip Generation based on JLB Traffic Engineering, Inc. Traffic Impact Analysis Report

## Traffic Signal Warrants

Peak hour traffic signal warrants, as appropriate, were prepared for the unsignalized intersections in the Near Term plus Project Traffic Conditions scenario. These warrants are found in Appendix J.

Under this scenario, the intersections of Lemoore Avenue and Lacey Boulevard, Lemoore Avenue and Street "S" and Cinnamon Drive and Hanford-Armona Road are projected to meet the peak hour warrant during the PM peak period only. The intersections of 19th Avenue and Hanford-Armona Road and Liberty Drive and Hanford-Armona Road satisfy the peak hour signal warrant during both peak periods. The remaining unsignalized study intersections do not satisfy the peak hour signal warrant during any peak period.

Based on the traffic signal warrants, operational analysis and engineering judgement, it is recommended that the City consider implementing traffic signal controls at the intersection of Liberty Drive and Hanford-Armona Road considering it is project to operate at an unacceptable LOS during the AM peak period. However, it is not recommended that the City consider implementing traffic signal controls at any of the other unsignalized study intersections especially since they are projected to operate at an acceptable LOS during both peak periods under stop sign control. It is worth noting that the CA MUTCD states, "satisfaction of a signal warrant or warrants shall not in itself require the installation of a traffic signal," Therefore, it is recommended that prior to the installation of a traffic signal, investigation of CA MUTCD warrants 4 and 7, as applicable, be conducted for these intersections.

## Results of Near Term plus Project Level of Service Analysis

The Near Term plus Project Traffic Conditions scenario assumes that the Existing plus Project roadway geometrics and traffic controls will remain in place. Figure 7 illustrates the Near Term plus Project turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Near Term plus Project Traffic Conditions scenario are provided in Appendix G. Table V presents a summary of the Near Term plus Project peak hour LOS at the study intersections.

Under this scenario, the study intersection of Liberty Drive and Hanford-Armona Road is projected to operate at an unacceptable LOS during the AM peak period. To improve the LOS at this intersection, it is recommended that the following improvement be implemented.

- Liberty Drive / Hanford-Armona Road
  - Signalize the intersection with protective left-turn phasing in all directions while retaining the existing lane geometrics.

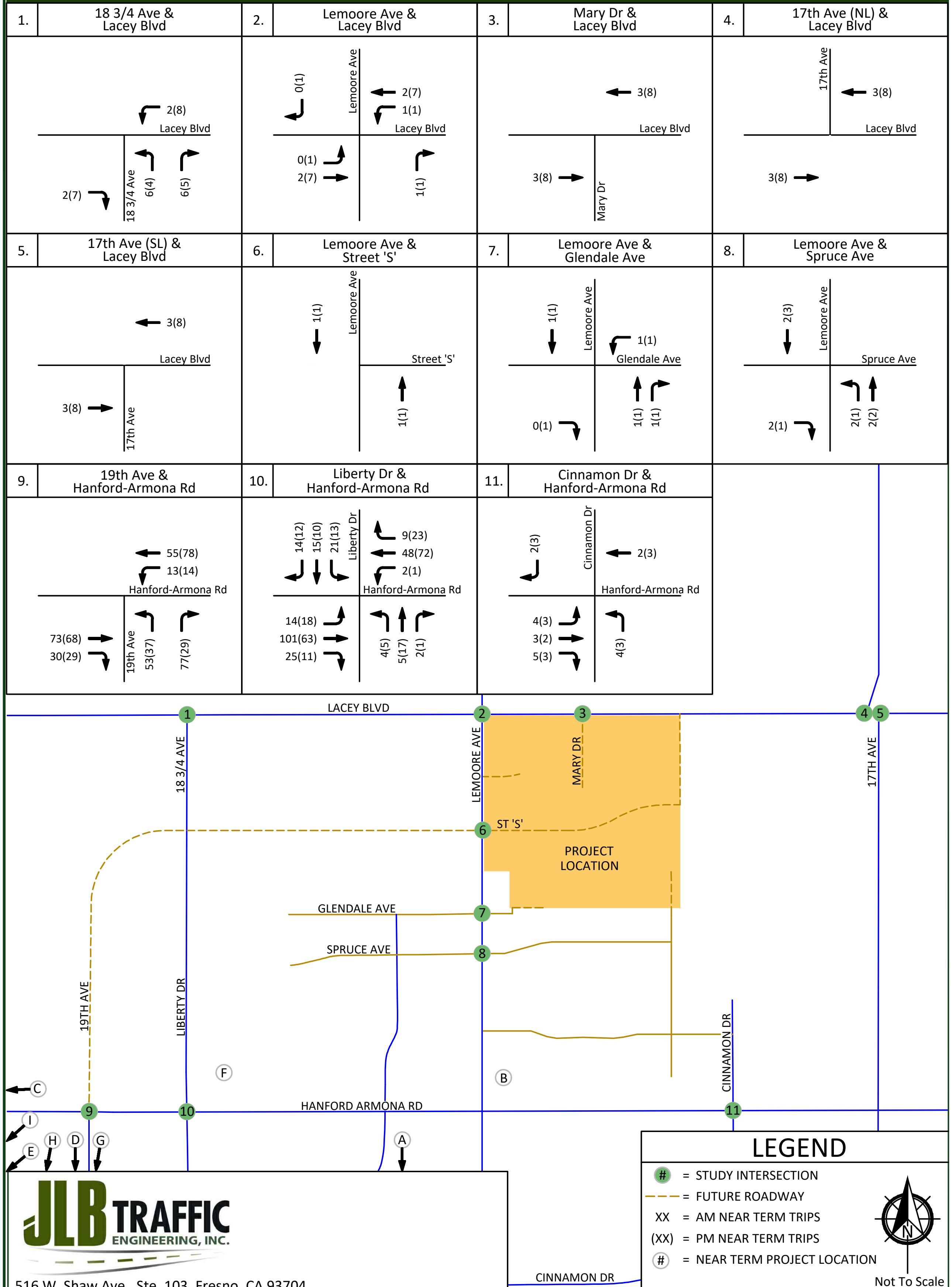
**Table V: Near Term plus Project Intersection LOS Results**

| ***ID*** | ***Intersection*** | ***Intersection Control*** | ***AM (7-9) Peak Hour*** | | ***PM (4-6) Peak Hour*** | |
|---|---|---|---|---|---|---|
| | | | ***Average Delay (sec/veh)*** | ***LOS*** | ***Average Delay (sec/veh)*** | ***LOS*** |
| 1 | 18 ¾ Avenue / Lacey Boulevard | One-Way Stop | 10.9 | B | 10.2 | B |
| 2 | Lemoore Avenue / Lacey Boulevard | All-Way Stop | 11.5 | B | 12.6 | B |
| 3 | Mary Drive / Lacey Boulevard | One-Way Stop | 10.2 | B | 10.6 | B |
| 4 | 17th Avenue / Lacey Boulevard (North Leg) | One-Way Stop | 11.1 | B | 12.7 | B |
| 5 | 17th Avenue / Lacey Boulevard (South Leg) | One-Way Stop | 11.3 | B | 12.0 | B |
| 6 | Lemoore Avenue / Street S | One-Way Stop | 13.7 | B | 14.5 | B |
| 7 | Lemoore Avenue / Glendale Avenue | Two-Way Stop | 21.4 | C | 23.3 | C |
| 8 | Lemoore Avenue / Spruce Avenue | Two-Way Stop | 31.1 | D | 24.1 | C |
| 9 | 19th Avenue / Hanford-Armona Road | One-Way Stop | 15.1 | C | 15.5 | C |
| 10 | Liberty Drive / Hanford-Armona Road | Two-Way Stop | **46.5** | **E** | 32.5 | D |
| | | Signalized (Improved) | 17.1 | B | 16.3 | B |
| 11 | Cinnamon Drive / Hanford-Armona Road | Two-Way Stop | 16.7 | C | 20.8 | C |

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls
LOS for two-way and one-way STOP controlled intersections are based on the worst approach/movement of the minor street.

# Lacey Ranch - City of Lemoore
## Near Term Project Trips' Assignment

Figure 6

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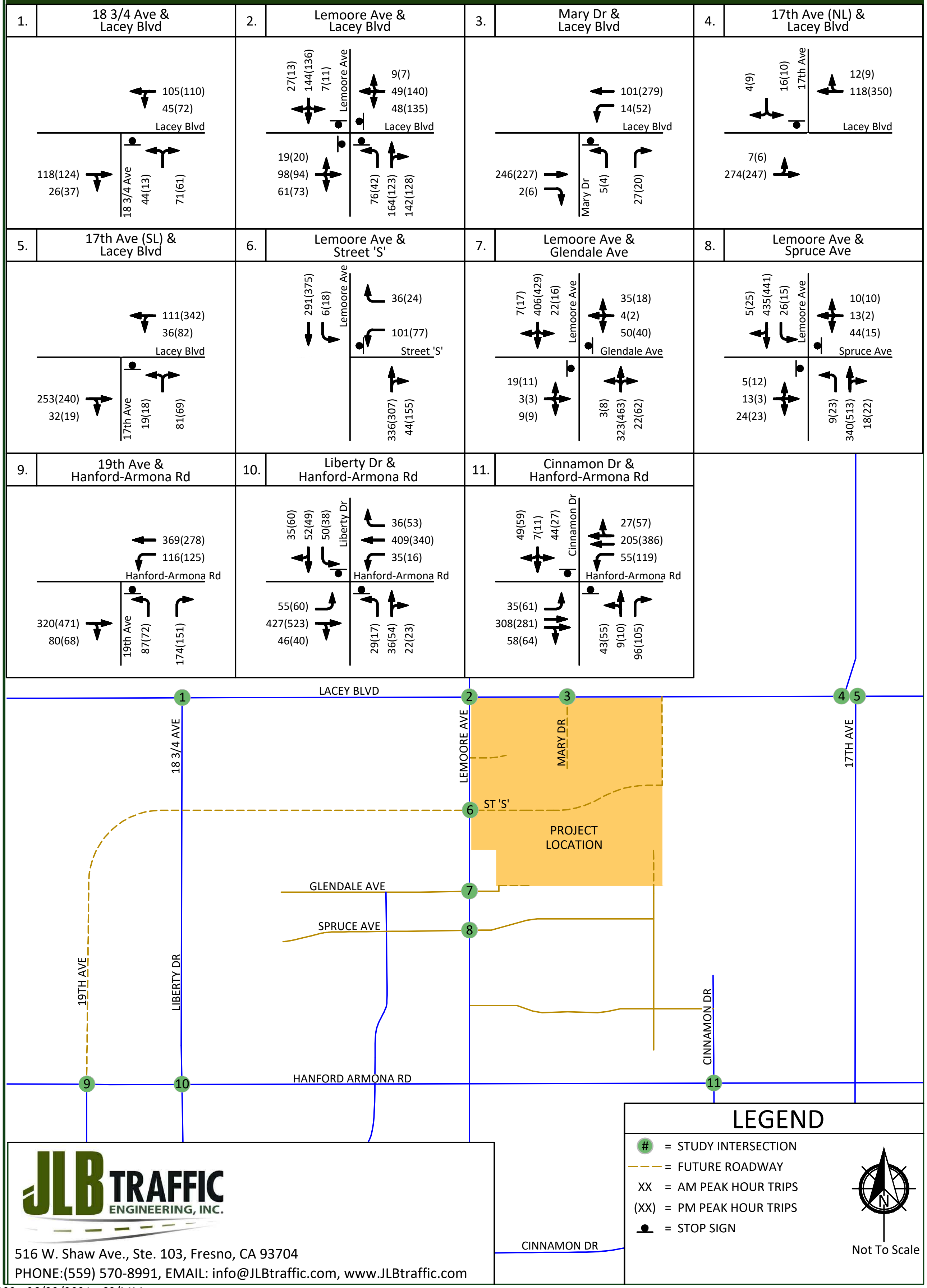
# Lacey Ranch - City of Lemoore

## Near Term plus Project - Traffic Volumes, Geometrics and Controls

Figure 7

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# Cumulative Year 2042 No Project Traffic Conditions

## Traffic Signal Warrants

Peak hour traffic signal warrants, as appropriate, were prepared for the unsignalized intersections in the Cumulative Year 2042 No Project Traffic Conditions scenario. These warrants are found in Appendix J.

Under this scenario, the intersections of Lemoore Avenue and Lacey Boulevard and Cinnamon Drive and Hanford-Armona Road are projected to satisfy the peak hour warrant during the PM peak period only. The intersections of 19th Avenue and Hanford-Armona Road and Liberty Drive and Hanford-Armona Road are projected to satisfy the peak hour signal warrant during both peak periods. The remaining unsignalized study intersections do not satisfy the peak hour signal warrant during any peak period.

Based on the traffic signal warrants, operational analysis and engineering judgement, it is recommended that the City consider implementing traffic signal controls at the intersection of Liberty Drive and Hanford-Armona Road considering it is projected to operate at an unacceptable LOS during the AM peak periods under stop sign control. However, it is not recommended that the City consider implementing traffic signal controls at any of the other unsignalized study intersections especially since they are projected to operate at an acceptable LOS during both peak periods under stop sign control. It is worth noting that the CA MUTCD states, "satisfaction of a signal warrant or warrants shall not in itself require the installation of a traffic control the installation of a traffic signal," Therefore, it is recommended that prior to the installation of a traffic signal, investigation of CA MUTCD warrants 4 and 7, as applicable, be conducted for these intersections.

## Results of Cumulative Year 2042 No Project Level of Service Analysis

The Cumulative Year 2042 No Project Traffic Conditions scenario assumes that the existing roadway geometrics and traffic controls will remain in place. Figure 8 illustrates the Cumulative Year 2042 No Project turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Cumulative Year 2042 No Project Traffic Conditions scenario are provided in Appendix H. Table VI presents a summary of the Cumulative Year 2042 No Project peak hour LOS at the study intersections.

Under this scenario, the study intersection of Liberty Drive and Hanford-Armona Road is projected to operate at an unacceptable LOS during the AM peak period. To improve the LOS at this intersection, it is recommended that the following improvement be implemented.

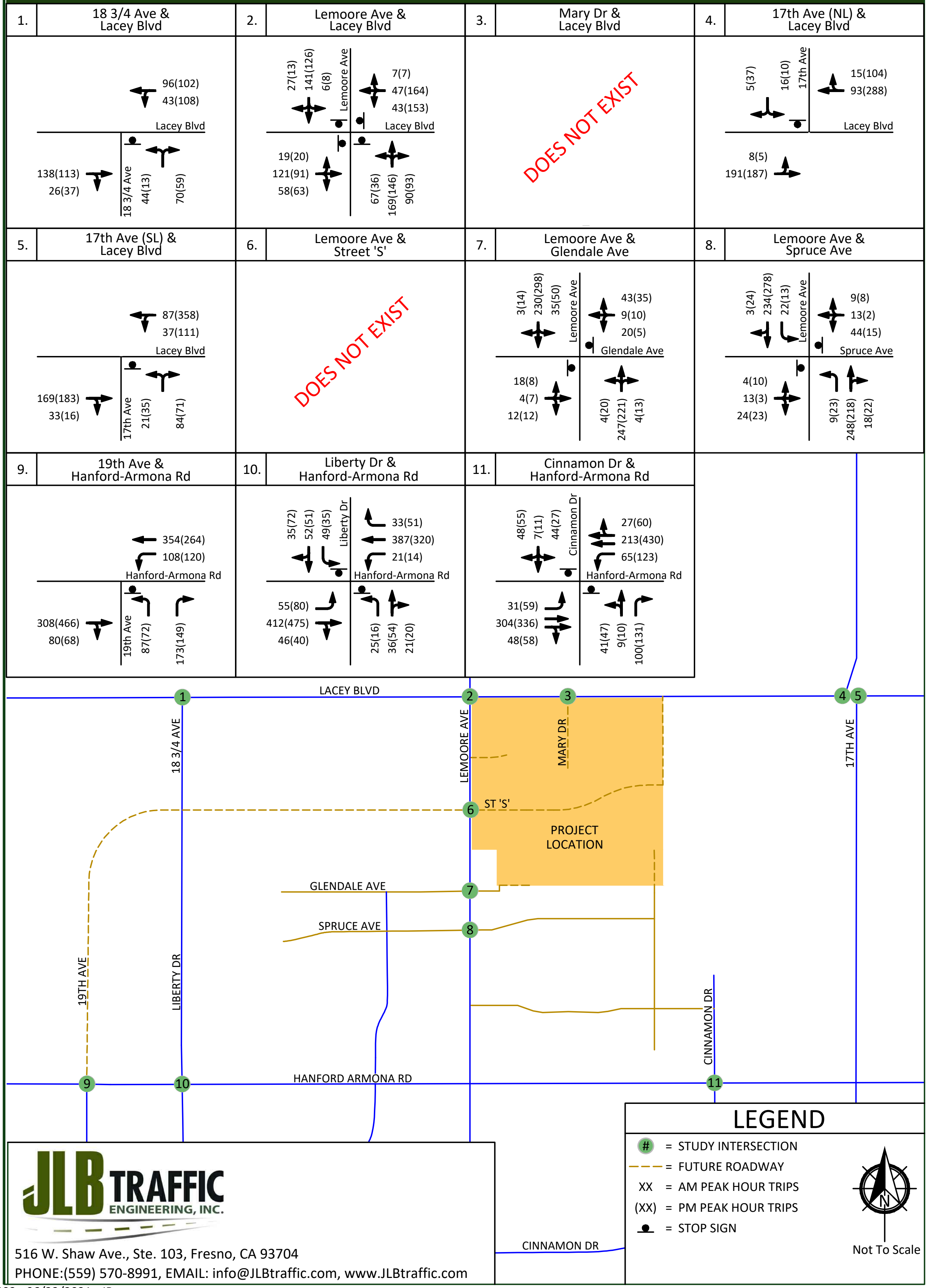
- Liberty Drive / Hanford-Armona Road
    - Signalize the intersection with protective left-turn phasing in all directions while retaining the existing lane geometrics.

## Table VI: Cumulative Year 2042 No Project Intersection LOS Results

| ID | Intersection | Intersection Control | AM (7-9) Peak Hour | | PM (4-6) Peak Hour | |
|---|---|---|---|---|---|---|
| | | | Average Delay (sec/veh) | LOS | Average Delay (sec/veh) | LOS |
| 1 | 18 ¾ Avenue / Lacey Boulevard | One-Way Stop | 11.1 | B | 10.3 | B |
| 2 | Lemoore Avenue / Lacey Boulevard | All-Way Stop | 11.3 | B | 13.0 | B |
| 3 | Mary Drive / Lacey Boulevard | Does Not Exist | N/A | N/A | N/A | N/A |
| 4 | 17th Avenue / Lacey Boulevard (North Leg) | One-Way Stop | 10.2 | B | 11.6 | B |
| 5 | 17th Avenue / Lacey Boulevard (South Leg) | One-Way Stop | 10.5 | B | 13.5 | B |
| 6 | Lemoore Avenue / Street S | Does Not Exist | N/A | N/A | N/A | N/A |
| 7 | Lemoore Avenue / Glendale Avenue | Two-Way Stop | 14.5 | B | 14.0 | B |
| 8 | Lemoore Avenue / Spruce Avenue | Two-Way Stop | 17.4 | C | 13.8 | B |
| 9 | 19th Avenue / Hanford-Armona Road | One-Way Stop | 14.6 | B | 15.2 | C |
| 10 | Liberty Drive / Hanford-Armona Road | Two-Way Stop | **37.3** | **E** | 31.5 | D |
| | | Signalized (Improved) | 18.1 | B | 16.1 | B |
| 11 | Cinnamon Drive / Hanford-Armona Road | Two-Way Stop | 17.2 | C | 24.7 | C |

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls.
LOS for two-way STOP controlled intersections are based on the worst approach/movement of the minor street.

# Lacey Ranch - City of Lemoore
# Figure 8
## Cumulative Year 2042 No Project - Traffic Volumes, Geometrics and Controls

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# Cumulative Year 2042 plus Project Traffic Conditions

## Traffic Signal Warrants

Peak hour traffic signal warrants, as appropriate, were prepared for the unsignalized intersections in the Cumulative Year 2042 plus Project Traffic Conditions scenario. These warrants are found in Appendix J.

Under this scenario, the intersections of 17th Avenue (South Leg) and Lacey Boulevard, Lemoore Avenue and Street "S" and Cinnamon Drive and Hanford-Armona Road are projected to meet the peak hour warrant during the PM peak period only. Under this scenario, the intersections of Lemoore Avenue and Lacey Boulevard, Lemoore Avenue and Glendale Avenue, 19th Avenue and Hanford-Armona Road and Liberty Drive and Hanford Armona-Road are projected to satisfy the peak hour signal warrant during both peak periods. The remaining unsignalized study intersections do not satisfy the peak hour signal warrant during any peak period.

Based on the traffic signal warrants, operational analysis and engineering judgement, it is recommended that the City consider implementing traffic signal controls at the intersection of Liberty Drive and Hanford-Armona Road considering it is projected to operate at an unacceptable LOS during both peak periods. However, it is not recommended that the City consider implementing traffic signal controls at any of the other unsignalized study intersections especially since they are projected to operate at an acceptable LOS during both peak periods under stop sign control. It is worth noting that the CA MUTCD states "satisfaction of a signal warrant or warrants shall not in itself require the installation of a traffic signal," Therefore, it is recommended that prior to the installation of a traffic signal, investigation of CA MUTCD warrants 4 and 7, as applicable, be conducted for these intersections.

## Results of Cumulative Year 2042 plus Project Level of Service Analysis

The Cumulative Year 2042 plus Project Traffic Conditions scenario assumes that the existing plus Project roadway geometrics and traffic controls will remain in place. Figure 9 illustrates the Cumulative Year 2042 plus Project turning movement volumes, intersection geometrics and traffic controls. LOS worksheets for the Cumulative Year 2042 plus Project Traffic Conditions scenario are provided in Appendix I. Table VII presents a summary of the Cumulative Year 2042 plus Project peak hour LOS at the study intersections.

Under this scenario, the study intersection of Liberty Drive and Hanford-Armona Road is projected to operate at an unacceptable LOS during both peak periods. To improve the LOS at this intersection, it is recommended that the following improvement be implemented.

- Liberty Drive / Hanford-Armona Road
  - Signalize the intersection with protective left-turn phasing in all directions while retaining the existing lane geometrics.

## Project Only Trip Assignment to State Facilities

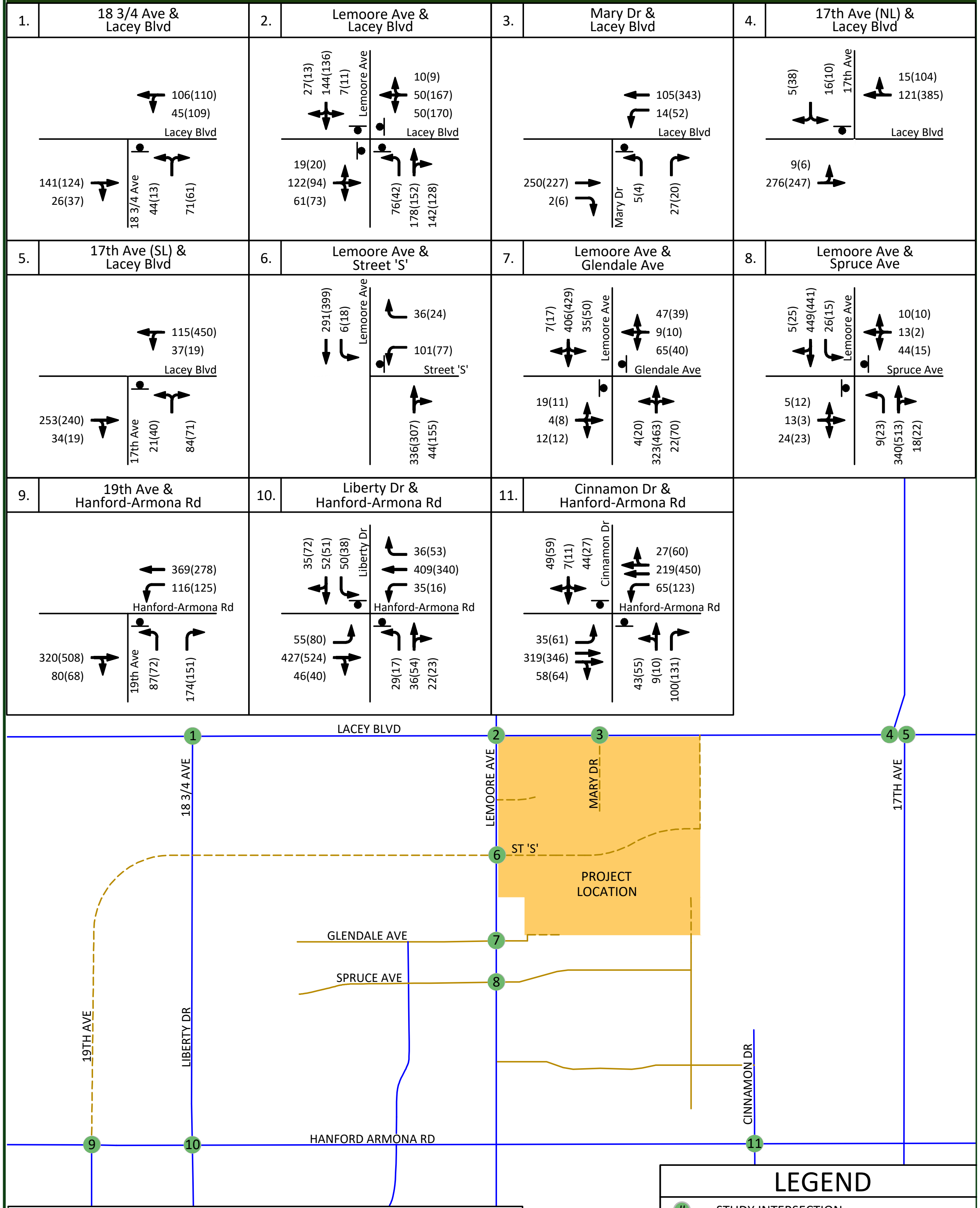
Figure 10 illustrates the Project Only Trips to the State Route 41 at Lacey Boulevard interchange. Similarly, Figure 11 illustrates the Project Only trips to the State Route 41 at Hanford-Armona Road Interchange.

## Table VII: Cumulative Year 2042 plus Project Intersection LOS Results

| ID | Intersection | Intersection Control | AM (7-9) Peak Hour | | PM (4-6) Peak Hour | |
|---|---|---|---|---|---|---|
| | | | Average Delay (sec/veh) | LOS | Average Delay (sec/veh) | LOS |
| 1 | 18 ¾ Avenue / Lacey Boulevard | One-Way Stop | 11.2 | B | 10.4 | B |
| 2 | Lemoore Avenue / Lacey Boulevard | All-Way Stop | 12.1 | B | 15.2 | C |
| 3 | Mary Drive / Lacey Boulevard | One-Way Stop | 10.2 | B | 10.7 | B |
| 4 | 17th Avenue / Lacey Boulevard (North Leg) | One-Way Stop | 11.1 | B | 13.0 | B |
| 5 | 17th Avenue / Lacey Boulevard (South Leg) | One-Way Stop | 11.4 | B | 16.2 | C |
| 6 | Lemoore Avenue / Street S | One-Way Stop | 13.7 | B | 14.8 | B |
| 7 | Lemoore Avenue / Glendale Avenue | Two-Way Stop | 27.1 | D | 28.8 | D |
| 8 | Lemoore Avenue / Spruce Avenue | Two-Way Stop | 32.3 | D | 24.1 | C |
| 9 | 19th Avenue / Hanford-Armona Road | One-Way Stop | 15.1 | C | 16.1 | C |
| 10 | Liberty Drive / Hanford-Armona Road | Two-Way Stop | **46.5** | **E** | **36.0** | **E** |
| | | Signalized (Improved) | 17.1 | B | 19.6 | B |
| 11 | Cinnamon Drive / Hanford-Armona Road | Two-Way Stop | 17.9 | C | 25.9 | D |

Note: LOS = Level of Service based on average delay on signalized intersections and All-Way STOP Controls.
LOS for two-way STOP controlled intersections are based on the worst approach/movement of the minor street.

# Lacey Ranch - City of Lemoore
## Figure 9
## Cumulative Year 2042 plus Project - Traffic Volumes, Geometrics and Controls




**LEGEND**

- # = STUDY INTERSECTION
- - - - = FUTURE ROADWAY
- XX = AM PEAK HOUR TRIPS
- (XX) = PM PEAK HOUR TRIPS
- ● = STOP SIGN

CINNAMON DR

Not To Scale

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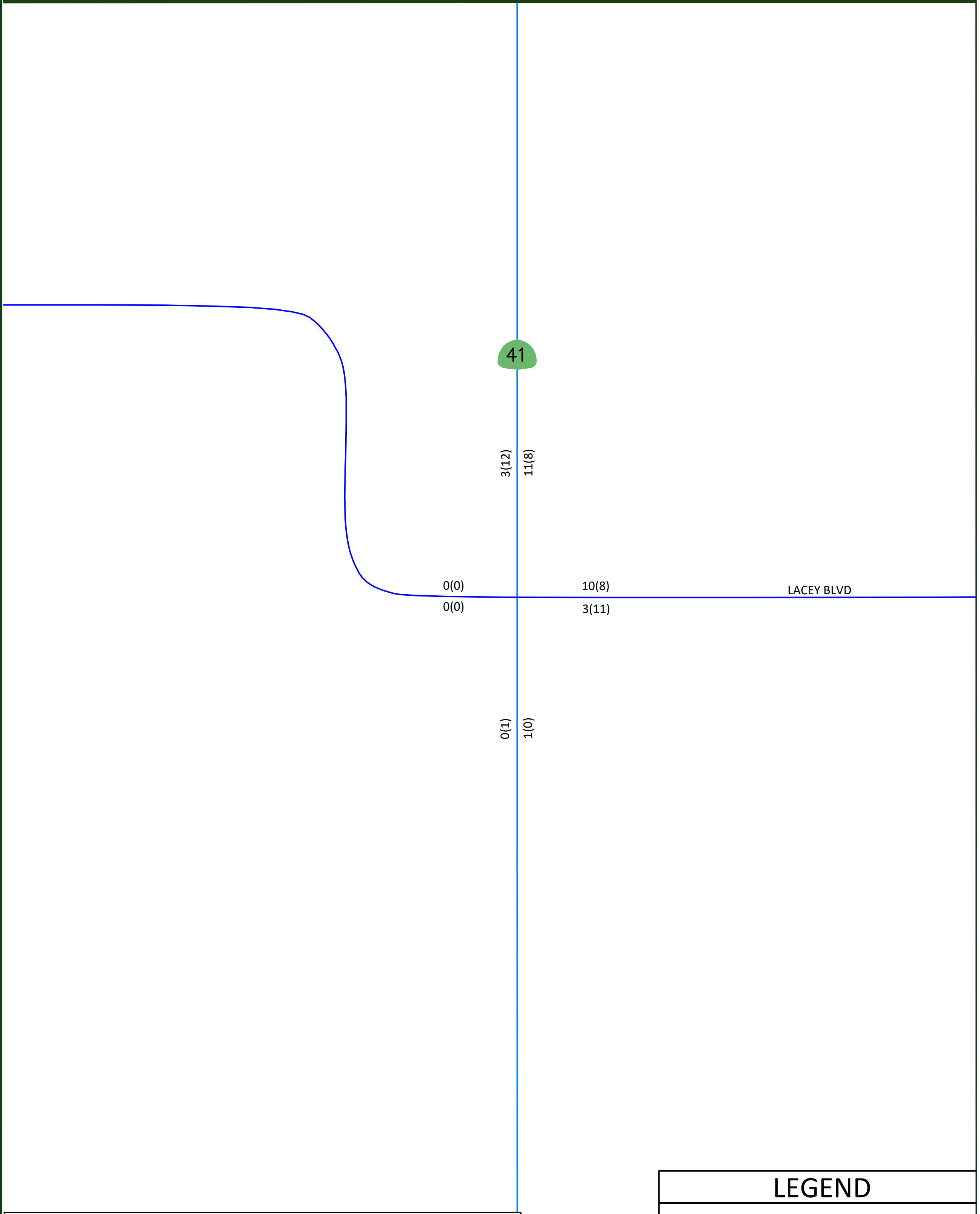
# Lacey Ranch - City of Lemoore

## State Route 41 and Lacey Boulevard - Project Only Trips

Figure 10




LEGEND

XX = AM PROJECT ONLY TRIPS

(XX) = PM PROJECT ONLY TRIPS

Not To Scale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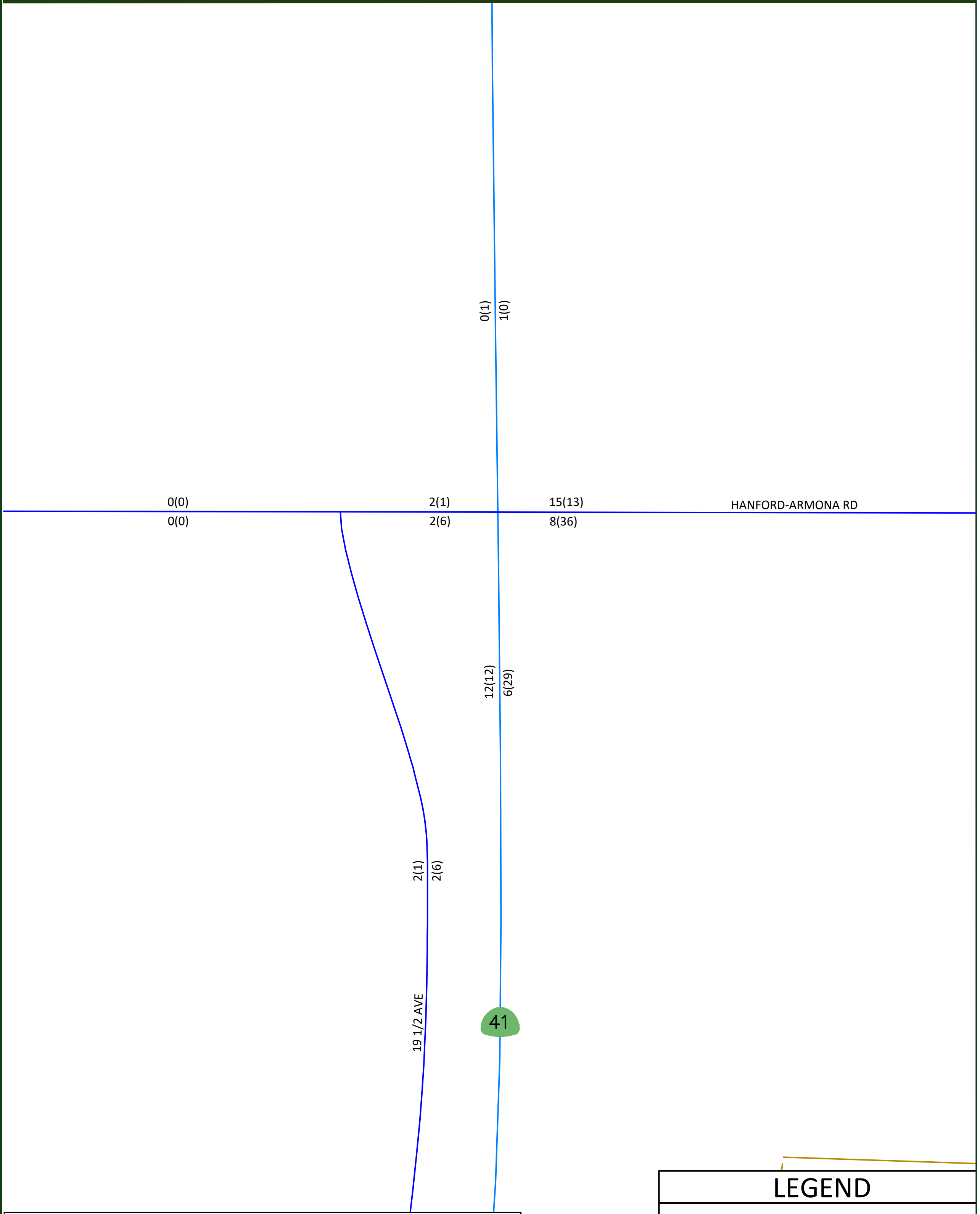
Lacey Ranch - City of Lemoore

State Route 41 and Hanford-Armona Road - Project Only Trips

Figure 11

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LEGEND

XX = AM PROJECT ONLY TRIPS

(XX) = PM PROJECT ONLY TRIPS

Not To Scale

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## Queuing Analysis

Table VIII provides a queue length summary for left-turn and right-turn lanes at the study intersections under all study scenarios. The queuing analyses for the study intersections are contained in the LOS worksheets for the respective scenarios. Appendix D contains the methodologies used to evaluate these intersections. Queuing analyses were completed using Sim Traffic output information. Synchro provides both 50th and 95th percentile maximum queue lengths (in feet). According to the Synchro manual, "the 50th percentile maximum queue is the maximum back of queue on a typical cycle and the 95th percentile queue is the maximum back of queue with 95th percentile volumes." The queues shown on Table VIII are the 95th percentile queue lengths for the respective lane movements.

The Highway Design Manual (HDM) provides guidance for determining deceleration lengths for the left-turn and right-turn lanes based on design speeds. Per the HDM criteria, "tapers for right-turn lanes are usually un-necessary since the main line traffic need not be shifted laterally to provide space for the right-turn lane. If, in some rare instances, a lateral shift were needed, the approach taper would use the same formula as for a left-turn lane." Therefore, a bay taper length pursuant to the Caltrans HDM would need to be added, as necessary, to the recommended storage lengths presented in Table VIII.

Based on the SimTraffic output files and engineering judgement, it is recommended that the storage capacity for the following be considered for the Cumulative Year 2042 plus Project Traffic Conditions. At the remaining approaches, the existing storage capacity will be sufficient to accommodate the maximum queue.

- 19th Avenue / Cinnamon Drive
    - Consider increasing the storage capacity of the southbound left-turn lane to 150 feet.

### Table VIII: Queuing Analysis

| *ID* | *Intersection* | *Existing Queue Storage Length (ft.)* | | *Existing* | | *Existing plus Project* | | *Near Term plus Project* | | *Cumulative Year 2042 No Project* | | *Cumulative Year 2042 plus Project* | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | *AM* | *PM* | *AM* | *PM* | *AM* | *AM* | *AM* | *PM* | *AM* | *PM* |
| 1 | 18 ¾ Avenue / Lacey Boulevard | EB TR | >500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | WB LT | >500 | 17 | 32 | 15 | 28 | 16 | 21 | 25 | 33 | 22 | 43 |
| | | NB LR | >500 | 37 | 45 | 59 | 38 | 43 | 41 | 57 | 46 | 50 | 45 |
| 2 | Lemoore Avenue / Lacey Boulevard | EB LTR | >500 | 60 | 59 | 61 | 65 | 60 | 60 | 64 | 54 | 64 | 63 |
| | | WB LTR | >500 | 46 | 76 | 49 | 73 | 48 | 77 | 47 | 78 | 57 | 88 |
| | | NB L | * | * | * | 51 | 45 | 48 | 43 | * | * | 47 | 45 |
| | | NB TR | * | * | * | 78 | 61 | 68 | 66 | * | * | 88 | 82 |
| | | NB LTR | >500 | 85 | 63 | * | * | * | * | 75 | 62 | * | * |
| | | SB LTR | >500 | 58 | 54 | 56 | 60 | 64 | 55 | 66 | 46 | 74 | 68 |
| 3 | Mary Drive / Lacey Boulevard | EB TR | * | * | * | 0 | 0 | 0 | 0 | * | * | 0 | 0 |
| | | WB L | * | * | * | 12 | 31 | 17 | 31 | * | * | 12 | 30 |
| | | WB T | * | * | * | 0 | 0 | 0 | 0 | * | * | 0 | 0 |
| | | NB L | * | * | * | 8 | 18 | 22 | 16 | * | * | 18 | 11 |
| | | NB R | * | * | * | 31 | 30 | 32 | 29 | * | * | 30 | 28 |

Note: * = Does not exist or is not projected to exist

## Table VIII: Queuing Analysis (cont.)

| ID | Intersection | Existing Queue Storage Length (ft.) | | Existing | | Existing plus Project | | Near Term plus Project | | Cumulative Year 2042 No Project | | Cumulative Year 2042 plus Project | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | AM | PM | AM | PM | AM | AM | AM | PM | AM | PM |
| 4 | 17th Avenue (NL) / Lacey Boulevard | EB LT | >500 | 0 | 0 | 0 | 8 | 8 | 8 | 0 | 15 | 8 | 8 |
| | | WB TR | >500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | SB LR | >500 | 20 | 18 | 22 | 19 | 17 | 24 | 22 | 31 | 16 | 33 |
| 5 | 17th Avenue (SL) / Lacey Boulevard | EB TR | >500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | WB LT | >500 | 46 | 35 | 27 | 49 | 33 | 48 | 28 | 67 | 36 | 67 |
| | | NB LR | >500 | 56 | 35 | 47 | 41 | 57 | 45 | 42 | 64 | 52 | 64 |
| 6 | Lemoore Avenue / Street 'S' | WB L | * | * | * | 75 | 57 | 74 | 57 | * | * | 62 | 51 |
| | | WB R | * | * | * | 48 | 42 | 46 | 53 | * | * | 56 | 42 |
| | | NB TR | * | * | * | 0 | 6 | 0 | 0 | * | * | 0 | 7 |
| | | SB L | * | * | * | 10 | 29 | 0 | 39 | * | * | 17 | 21 |
| | | SB T | * | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | Lemoore Avenue / Glendale Avenue | EB LTR | >500 | 56 | 43 | 49 | 47 | 57 | 48 | 47 | 37 | 44 | 48 |
| | | WB LTR | >500 | 56 | 45 | 64 | 58 | 64 | 57 | 53 | 51 | 68 | 110 |
| | | NB LTR | >300 | 10 | 15 | 23 | 25 | 14 | 21 | 12 | 22 | 9 | 45 |
| | | SB LTR | >500 | 9 | 18 | 43 | 31 | 24 | 29 | 38 | 24 | 44 | 77 |
| 8 | Lemoore Avenue / Spruce Avenue | EB LTR | >500 | 53 | 40 | 59 | 57 | 62 | 53 | 58 | 45 | 55 | 50 |
| | | WB LTR | >500 | 52 | 42 | 66 | 49 | 63 | 51 | 60 | 48 | 81 | 47 |
| | | NB L | 250 | 0 | 26 | 14 | 20 | 14 | 25 | 10 | 19 | 27 | 35 |
| | | NB TR | >500 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | SB L | 250 | 20 | 17 | 25 | 27 | 32 | 30 | 14 | 0 | 30 | 25 |
| | | SB TR | >300 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 19th Avenue / Hanford-Armona Road | EB TR | >500 | 0 | 0 | 7 | 0 | 7 | 7 | 10 | 14 | 16 | 7 |
| | | WB L | 250 | 48 | 46 | 58 | 54 | 79 | 60 | 52 | 69 | 67 | 62 |
| | | WB T | >500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | NB L | 250 | 41 | 47 | 51 | 45 | 136 | 96 | 117 | 83 | 75 | 77 |
| | | NB R | >300 | 62 | 61 | 70 | 60 | 84 | 68 | 83 | 84 | 73 | 84 |
| 10 | Liberty Drive / Hanford-Armona Road | EB L | 250 | 33 | 38 | 43 | 38 | 90 | 61 | 75 | 77 | 71 | 81 |
| | | EB TR | >500 | 6 | 0 | 8 | 9 | 217 | 195 | 233 | 210 | 160 | 201 |
| | | WB L | 200 | 32 | 25 | 29 | 28 | 53 | 44 | 42 | 44 | 70 | 50 |
| | | WB T | >500 | 0 | 10 | 10 | 0 | 197 | 179 | 165 | 162 | 172 | 164 |
| | | WB R | 200 | 0 | 0 | 7 | 0 | 47 | 48 | 38 | 48 | 40 | 42 |
| | | NB L | 180 | 56 | 35 | 44 | 35 | 55 | 42 | 44 | 41 | 55 | 35 |
| | | NB TR | >500 | 62 | 65 | 63 | 54 | 72 | 82 | 74 | 82 | 71 | 82 |
| | | SB L | 50 | 34 | 33 | 29 | 25 | 46 | 43 | 68 | 46 | 67 | 79 |
| | | SB TR | >500 | 42 | 50 | 37 | 49 | 68 | 52 | 59 | 60 | 71 | 86 |

Note: * = Does not exist or is not projected to exist

## Table VIII: Queuing Analysis (cont.)

| ID | Intersection | Existing Queue Storage Length (ft.) | | Existing | | Existing plus Project | | Near Term plus Project | | Cumulative Year 2042 No Project | | Cumulative Year 2042 plus Project | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | AM | PM | AM | PM | AM | PM | AM | PM | AM | PM |
| 11 | Cinnamon Drive / Hanford-Armona Road | EB L | 200 | 19 | 37 | 19 | 41 | 15 | 48 | 17 | 33 | 20 | 37 |
| | | EB T | >500 | 0 | 0 | 0 | 7 | 9 | 0 | 8 | 0 | 0 | 0 |
| | | EB TR | >500 | 5 | 5 | 0 | 6 | 7 | 8 | 0 | 7 | 0 | 5 |
| | | WB L | 100 | 34 | 42 | 29 | 44 | 25 | 53 | 45 | 47 | 44 | 45 |
| | | WB T | >500 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 |
| | | WB TR | >500 | 0 | 12 | 0 | 20 | 0 | 0 | 0 | 12 | 0 | 0 |
| | | NB LT | >500 | 47 | 52 | 53 | 59 | 49 | 63 | 49 | 68 | 52 | 67 |
| | | NB R | 120 | 46 | 48 | 67 | 44 | 51 | 48 | 55 | 59 | 51 | 57 |
| | | SB LTR | >500 | 74 | 71 | 67 | 79 | 66 | 64 | 73 | 74 | 64 | 73 |

Note: * = Does not exist or is not projected to exist

# Conclusions and Recommendations

Conclusions and recommendations regarding the proposed Project are presented below.

### *Existing Traffic Conditions*

- At present, all study intersections operate at an acceptable LOS during both peak periods.

### *Existing plus Project Traffic Conditions*

- The Project proposes to develop approximately 156-acres with single family residential units, multifamily units and parks
- JLB analyzed the location of the proposed access points relative to the existing local roads and driveways in the Project's vicinity. A review of the Project access points indicates that they are located at points that minimize traffic operational impacts to the existing roadway network.
- The proposed Project is estimated to generate a maximum of 7,362 daily trips, 554 AM peak hour trips and 730 PM peak hour trips.
- It is recommended that the Project implement a Class II Bike Lane along its frontages to Lemoore Avenue, Lacey Boulevard, Street 'S' and Mary Drive between Street "I" and Lacey Boulevard in order to encourage multi modal transportation and reduce VMT.
- It is recommended that the Project implement ADA compliant walkways along its frontages to Lemoore Avenue, Lacey Boulevard and the Project's internal streets in order to encourage multi modal transportation and reduce VMT.
- Under this scenario, all study intersections are projected operate at an acceptable LOS during both peak periods.

### *Near Term plus Project Traffic Conditions*

- The total trip generation for the Near Term Projects is 16,621 daily trips, 1,625 AM peak hour trips and 1,455 PM peak hour trips.
- Under this scenario, the study intersection of Liberty Drive and Hanford-Armona Road is projected to operate at an unacceptable LOS during the AM peak period. To improve the LOS at this intersection, it is recommended that the following improvement be implemented.
    - Liberty Drive / Hanford-Armona Road
        - Signalize the intersection with protective left-turn phasing in all directions while retaining the existing lane geometrics.

### *Cumulative Year 2042 No Project Traffic Conditions*

- Under this scenario, the study intersection of Liberty Drive and Hanford-Armona Road is projected to operate at an unacceptable LOS during the AM peak period. To improve the LOS at this intersection, it is recommended that the following improvement be implemented.
    - Liberty Drive / Hanford-Armona Road
        - Signalize the intersection with protective left-turn phasing in all directions while retaining the existing lane geometrics.

### *Cumulative Year 2042 plus Project Traffic Conditions*

- Under this scenario, the study intersection of Liberty Drive and Hanford-Armona Road is projected to operate at an unacceptable LOS during both peak periods. To improve the LOS at this intersection, it is recommended that the following improvement be implemented.
  - Liberty Drive / Hanford-Armona Road
    - Signalize the intersection with protective left-turn phasing in all directions while retaining the existing lane geometrics.

### *Queuing Analysis*

- It is recommended that the City consider left-turn and right-turn lane storage lengths as indicated in the Queuing Analysis.

## Study Participants

**JLB Traffic Engineering, Inc. Personnel:**

| | |
|---|---|
| Jose Luis Benavides, PE, TE | Project Manager |
| Susana Maciel, EIT | Project Engineer |
| Matthew Arndt, EIT | Engineer I/II |
| Javier Rios | Engineer I/II |
| Jesus Garcia | Engineer I/II |
| Dennis Wynn | Sr. Engineering Technician |
| Adrian Benavides | Engineering Aide |
| Christian Sanchez | Engineering Aide |
| Michael McConnel | Engineering Aide |

**Persons Consulted:**

| | |
|---|---|
| Travis L. Crawford, AICP | Crawford & Bowen Planning, Inc. |
| Jeff Roberts | Assemi Group, Inc. |
| Steve Brandt | City of Lemoore |
| Judy Holwell | City of Lemoore |
| Dominic Tyburski | County of Kings |
| Michael Navarro | Caltrans |
| Lorena Mendibles | Caltrans |

# References


California Air Pollution Control Officers Association. 2010. "Quantifying Greenhouse Gas Mitigation Measures: A Resource For Local Government To Assess Emission Reductions From Greenhouse Gas Mitigation Measures". Sacramento: State of California.

California Department of Transportation. 2020. "California Highway Design Manual". Sacramento: State of California.

California Department of Transportation. 2020. "California Manual On Uniform Traffic Control Devices, FHWA's MUTCD 2009 Edition, including Revisions 1 & 2 as amended for use in California ". Sacramento: 2014 ed. State of California, pp.1-1419.

California Department of Transportation. 2002. "Guide For The Preparation Of Traffic Impact Studies". State of California, pp.1-19. 2014.

City of Lemoore. 2008. "City of Lemoore 2030 General Plan". Lemoore: City of Lemoore, Ch. 4.

County of Kings. 2010. "2035 Kings County General Plan". Kings: County of Kings, Circulation Element.

County of Kings. 2011. "2011 Kings County Regional Bicycle Plan". Kings: County of Kings, pp.1-70.

Governor's Office of Planning and Research. 2018. Technical Advisory On Evaluating Transportation Impacts In CEQA. Ebook. Sacramento: State of California, pp.1-34. Available at: <https://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf> [Accessed 20 January 2021].

Institute of Transportation Engineers. 2017. "Trip Generation Manual". Washington: Institute of Transportation Engineers. Vol. 1-3.

# APPENDIX I continued

# Draft Vehicle Miles Traveled Analysis

## Lacey Ranch Development

**Located on the Southeast Corner of Lemoore Avenue and Lacey Boulevard**

**In the City of Lemoore, California**

***Prepared for:***

Crawford & Bowen Planning, Inc.
113 N. Church Street, Suite 302
Visalia, CA 93291

June 28, 2021

Project No. 039-003


***Traffic Engineering, Transportation Planning, & Parking Solutions***
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JLB TRAFFIC ENGINEERING, INC.

*Traffic Engineering, Transportation Planning, & Parking Solutions*

# Draft Vehicle Miles Traveled Analysis

## For the Lacey Ranch located on the Southeast Corner of Lemoore Avenue and Lacey Boulevard

In the City of Lemoore, CA

June 28, 2021

This Draft Vehicle Miles Traveled Analysis has been prepared under the direction of a licensed Traffic Engineer. The licensed Traffic Engineer attests to the technical information contained therein and has judged the qualifications of any technical specialists providing engineering data from which recommendations, conclusions and decisions are based.

Prepared by:

________________________________

Jose Luis Benavides, P.E., T.E.

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**Appendix A: VMT Output and Mitigation Measures**

# Project Description

This report describes a Draft Vehicle Miles Traveled (VMT) Analysis prepared by JLB Traffic Engineering, Inc. (JLB) for the Lacey Ranch Development (Project) located on the southeast corner of Lemoore Avenue and Lacey Boulevard in the City of Lemoore. The Project proposes to develop approximately 156-acres with single family residential units, multifamily units and parks. The project description states this development will be limited to a maximum of 825 housing units. Based on information provided to JLB, the Project will go through the preparation of an Environmental Impact Report through the City of Lemoore.

# VMT Analysis

## Regulatory Setting

Senate Bill (SB) 743 requires that relevant California Environmental Quality Act (CEQA) analysis of transportation impacts be conducted using a metric known as VMT instead of level of service (LOS). VMT measures how much actual auto travel (additional miles driven) a proposed project would create on California roads. If the project adds excessive car travel onto our roads, the project may cause a significant transportation impact.

The State CEQA Guidelines were amended to implement SB 743, by adding Section 15064.3. Among its provisions, Section 15064.3 confirms that, except with respect to transportation projects, a project's effect on automobile delay shall not constitute a significant environmental impact. Therefore, LOS measures of impacts on traffic facilities are no longer a relevant CEQA criteria for transportation impacts.

CEQA Guidelines Section 15064.3(b)(4) states that "[a] lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled, and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revision to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section."

As of the creation of this report, neither the City of Lemoore nor Kings CAG have adopted guidelines or thresholds for VMT pursuant to Senate Bill 743. For this reason, this VMT analysis follows the guide of the December 2018 *Technical Advisory on Evaluating Transportation Impacts in CEQA* (TA) published by the Governor's Office of Planning and Research (OPR) and the August 2010 Quantifying *Greenhouse Gas Mitigation Measures* published by the California Air Pollution Control Officers Association (CAPCOA) to analyze the Project's VMT.

The TA contains screening standard and criteria that can be used to screen out qualified development projects that meet the adopted criteria from needing to prepare a detailed VMT Analysis. These criteria may be size, location, proximity to transit or trip making potential. In general development projects that meet one or more of the following criteria can be screened out from a quantitative VMT analysis. In this case, the Project does not meet any of the screening criteria.

For projects that are not screened out, a quantitative analysis of VMT impacts must be prepared and compared against the adopted VMT thresholds of significance. According to the TA, residential developments that generate vehicle travel that is 15 percent or more below the existing residential VMT per capita, measured against the region, are considered to have a less-than-significant transportation impact. The threshold of significance was developed using the County of Kings as the applicable region, and the required reduction of VMT corresponds to Kings County's contribution to the statewide GHG emission reduction target. In order to reach the statewide GHG reduction target of 15%, Kings County must reduce its GHG emissions by 15%. The method of reducing GHG by 15% is to reduce VMT by 15% as well.

## Baseline VMT

VMT is simply the product of a number of trips and those trips' lengths. The first step in a VMT analysis is to establish the baseline average VMT, which requires the definition of a region. The established region for the project is Kings County, which is modeled by the Kings County Association of Governments (KCAG). The Project's trip generation, number of residential units, and square footages of non-residential uses were provided to KCAG in order to conduct a Project-specific VMT analysis using the KCAG model for specific Project components. Based on KCAG VMT results, Project components containing residential land uses are projected to yield an average VMT per capita of 9.29 which exceeds the City's VMT threshold for residential uses of 8.16 VMT per capita. As a result, it is recommended that the Project implement VMT mitigation measures for the residential component to reduce VMT per Capita. Appendix A presents the Project VMT outputs from the KCAG model.

## VMT Mitigation Measures

The VMT mitigation measures that were considered feasible for this Project include the following: increasing destination accessibility, locate project near bike path/bike lane, improve design of development, provide pedestrian network improvements, provide traffic calming measures, incorporate bike lane street design (on-site), provide bike parking with multi-unit residential projects and dedicate land for bike trails. Worth noting that VMT mitigation measures such as utilize neighborhood electric vehicles (NEVs), provide electric vehicle parking and expanding transit network, to name a few, were not accounted for in the VMT analysis for the proposed Project. For example, the Project will be fitted with bus bays, but due to the improbability that a transit route gets added or expanded, the VMT reduction from this mitigation were not included in the calculations to present a conservative analysis of the Project's VMT. Also, providing NEVs to residents will not effectively reduce VMT per capita unless the Project connects to a greater NEV network that provides NEV access to a variety of land uses. It is estimated that given the design elements associated with the Project and the surrounding multi-modal network, the Project will benefit from reductions in VMT as a result of other measures. Since these measures are not implemented without justification, only the measures presented within this report were considered for this analysis as part of the VMT mitigation measures. The VMT mitigation measures and reduction rates were determined based on the following:

- Land-Use/Location (Maximum Reduction: 5.00%)
  - LUT-4: Increase Destination Accessibility
    - This measure is appropriate for residential, office, retail, mixed-use and industrial projects in urban or suburban context.
    - It is recommended that the Project implement bicycle facilities within and adjacent to the Project site. Within the Project it is recommended that Class I Bikeways get added along the south side of Street 'S' between Lemoore Avenue and the eastern boundary of the Project and along Street 'G' between Street 'S' and Street 'P'. Also, within the Project it is recommended that Class II Bikeways get added along Street 'S' between Lemoore Avenue and the eastern boundary of the Project and along Mary Drive between Street 'I' and Lacey Boulevard. Adjacent to the Project it is recommended that Class II Bikeways be added along its frontages to Lemoore Avenue between Lacey Boulevard and Glendale Avenue and along Lacey Boulevard between Lemoore Avenue the eastern boundary of the Project.
    - The effectiveness of this measure will depend largely on the Project location and increasing potential for pedestrians to walk and bike to central locations (CAPCOA 2010).
    - VMT Mitigation Method: VMT Reduction (%) = (12 - 8)/12 * 0.2 = 6.67% (CAPCOA 2010)
      - VMT Reduction (%) = Center Distance * B (not to exceed 30%), where
        - Center Distance = (12 - Distance to downtown/job center for Project) / 12
        - B = Elasticity of VMT with respect to distance to downtown or major job center [use 0.2]
  - LUT-8: Locate project near bike path/bike lane
    - This measure is appropriate for residential, office, retail, mixed-use and industrial projects in urban or suburban contexts.
    - It is recommended that the Project implement bicycle facilities within and adjacent to the Project site. Within the Project it is recommended that Class I Bikeways get added along the south side of Street 'S' between Lemoore Avenue and the eastern boundary of the Project and along Street 'G' between Street 'S' and Street 'P'. Also, within the Project it is recommended that Class II Bikeways get added along Street 'S' between Lemoore Avenue and the eastern boundary of the Project and along Mary Drive between Street 'I' and Lacey Boulevard. Adjacent to the Project it is recommended that Class II Bikeways be added along its frontages to Lemoore Avenue between Lacey Boulevard and Glendale Avenue and along Lacey Boulevard between Lemoore Avenue the eastern boundary of the Project.
    - The effectiveness of this measure will depend largely on its implementation as a stand-alone strategy or in combination with multiple design elements that increase opportunities for multi-modal travel (CAPCOA 2010).

  - LUT-9: Improve Design of Development
    - This measure is appropriate for residential, office, retail, mixed-use and industrial projects in urban or suburban context.
    - The effectiveness of this measure will depend largely on its implementation as a stand-alone strategy or in combination with multiple design elements that increase opportunities for multi-modal travel (CAPCOA 2010).
    - VMT Mitigation Measure: VMT Reduction (%) = ((58-36)/36) * 0.12 = 7.33% (CAPCOA 2010)
      - VMT Reduction (%) = (Intersection per square mile of project - Typical intersection per square mile) / Typical intersection per square mile (not to exceed 500%), where
        - Intersection per square mile of project = 14 intersections / 0.24 square miles = 58.33
        - Typical intersection per square mile = 36
- Neighborhood/Site Design (Max. Reduction: 5.00%)
  - SDT-1: Provide Pedestrian Network Improvements
    - This measure is appropriate for residential, office, retail, mixed-use and industrial projects in urban, suburban and rural context.
    - It is recommended that the Project implement bicycle facilities within and adjacent to the Project site. Within the Project it is recommended that Class I Bikeways get added along the south side of Street 'S' between Lemoore Avenue and the eastern boundary of the Project and along Street 'G' between Street 'S' and Street 'P'. Also, within the Project it is recommended that Class II Bikeways get added along Street 'S' between Lemoore Avenue and the eastern boundary of the Project and along Mary Drive between Street 'I' and Lacey Boulevard. Adjacent to the Project it is recommended that Class II Bikeways be added along its frontages to Lemoore Avenue between Lacey Boulevard and Glendale Avenue and along Lacey Boulevard between Lemoore Avenue the eastern boundary of the Project.
    - The effectiveness of this measure requires providing a pedestrian access network that internally links all uses and connects to all existing or planned external streets and pedestrian facilities contiguous with the Project site (CAPCOA 2010).
  - SDT-2: Provide Traffic Calming Measures
    - This measure is appropriate for residential, office, retail, mixed-use and industrial projects in urban, suburban and rural context.
    - The effectiveness of this measure requires roadways be designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips with calming features such as marked crosswalks, curb extensions, raised crosswalks, raised intersections, median islands, tight-corner radii, roundabouts or mini-circles, on-street parking, planter strips with trees, chicanes/chokers and others (CAPCOA 2010).
      - Percentage of intersections with improvement: 25%
      - Percentage of streets with improvements: 100%
    - The Project will incorporate intersection traffic calming features such as mini-circles at the intersections of Beverly Drive and Street 'S', Street 'G' and Street 'S', Street 'L' and Street 'S', Street 'C' and Street 'I', Street 'D' and Street 'I', Mary Drive and Street 'I' and Street 'A' and Street 'F'.

- The Project will incorporate street traffic calming features including on street parking throughout the Project excluding Street 'S' between Lemoore Avenue and the eastern boundary of the Project as well as Mary Drive between Lacey Boulevard and Street 'J', median islands on Street 'S' between Lemoore Avenue and the Street 'D' and on Mary Drive between Lacey Boulevard and Street 'I', and planter strips with street trees throughout the Project.

- SDT-5: Incorporate Bike Lane Street Design (on-site)
  - This measure is appropriate for residential, office, retail, mixed-use and industrial projects in urban or suburban context.
  - It is recommended that the Project implement of bicycle facilities within and adjacent to the Project site. Within the Project it is recommended that Class I Bikeways get added along the south side of Street 'S' between Lemoore Avenue and the eastern boundary of the Project and along Street 'G' between Street 'S' and Street 'P'. Also, within the Project it is recommended that Class II Bikeways get added along Street 'S' between Lemoore Avenue and the eastern boundary of the Project and along Mary Drive between Street 'I' and Lacey Boulevard. Adjacent to the Project it is recommended that Class II Bikeways be added along its frontages to Lemoore Avenue between Lacey Boulevard and Glendale Avenue and along Lacey Boulevard between Lemoore Avenue the eastern boundary of the Project.
  - The effectiveness of this measure will depend largely on its implementation as a stand-alone strategy or in combination with multiple design elements to strengthen street network characteristics and enhance multi-modal environments (CAPCOA 2010).
- SDT-7: Provide Bike Parking with Multi-Unit Residential Projects
  - This measure is appropriate for residential projects in urban, suburban or rural context.
  - The effectiveness of this measure will depend largely on its implementation as a stand-alone strategy or in combination with multiple design elements to strengthen street network characteristics and enhance multi-modal environments (CAPCOA 2010).
  - It is recommended that the Project implement a minimum of 14 bike parking spaces within the multi-family residential component.
- SDT-9: Dedicate Land for Bike Trails
  - This measure is appropriate for large residential, office, retail, mixed-use and industrial projects in urban, suburban or rural context.
  - The effectiveness of this measure will depend largely on its implementation as a stand-alone strategy or in combination with multiple design elements to strengthen street network characteristics and enhance multi-modal environments (CAPCOA 2010).
  - It is recommended that Class I Bikeways get added along the south side of Street 'S' between Lemoore Avenue and the eastern boundary of the Project and along Street 'G' between Street 'S' and Street 'P'.

Table I identifies the Recommended VMT mitigation measures appropriate for residential land uses, the recommended VMT reduction rates per the *Quantifying Greenhouse Gas Mitigation Measures* published by CAPCOA. Appendix A presents a summary of the VMT reduction associated with each mitigation measure identified in Table I.

## Table I: Recommended VMT Mitigation Measures

| **VMT Category** | ***Transportation Categories*** | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **VMT Sub-Categories** | **Land-Use/Location** | | | **Neighborhood / Site Enhancement** | | | | |
| **VMT Measures** | LUT-4: Increase Destination Accessibility | LUT-8: Locate Project near Bike Path/Bike Lane | LUT-9: Improve Design of Development | SDT-1: Provide Pedestrian Network Improvements | SDT-2: Provide Traffic Calming Measures | SDT-5: Incorporate Bike Lane Street Design (on-site) | SDT-7: Provide Bike Parking with Multi-Unit Residential Projects | SDT-9: Dedicate Land for Bike Trails |
| **VMT Measure Reduction Rate[1] (%)** | 6.67 | N/A | 7.33 | 2.00 | 0.5 | N/A | N/A | N/A |
| **Max. VMT Measure Reduction Rate[2] (%)** | 20.00 | N/A | 21.30 | 2.00 | 1.00 | N/A | N/A | N/A |
| **Category VMT Reduction Rate (%)** | 13.51 | | | 2.49 | | | | |
| **Max. Category VMT Reduction Rate[2] (%)** | 5.00 | | | 5.00 | | | | |
| **Transportation VMT Reduction Rate (%)** | 7.37[3] | | | | | | | |
| **Max. Transportation VMT Reduction Rate[2] (%)** | 10.00 | | | | | | | |

Note: 1 = VMT Reduction Rate based on engineering judgement, data provided by the developer and CAPCOA *Quantifying Greenhouse Gas Mitigation Measures*
*2 = Maximum Reduction Rates are derived from CAPCOA Quantifying Greenhouse Gas Mitigation Measures*
*3 = Calculated using the Max. Category VMT Reduction Rate if the Category VMT Reduction Rate is greater than the Max. Category Reduction Rate*

## VMT Results and Conclusion

As can be seen in Table II below, VMT mitigation measures and Internal Capture are projected to reduce the residential VMT per capita from 9.29 to 8.61. This reduced residential VMT is short of meeting the City's Threshold of 8.16 VMT per capita. In conclusion, the Project with mitigations would result in significant but unavoidable VMT impacts by the residential components pursuant to the *Quantifying Greenhouse Gas Mitigation Measures* published by CAPCOA.

### Table II: Residential VMT Results

| ***Project Components*** | ***Kings CAG plus Project VMT Results***[1] | ***Reduction in VMT from Mitigation***[2] | ***VMT (With Mitigations)*** | ***City of Lemoore VMT Threshold*** | ***Significant VMT Impact?*** |
|---|---|---|---|---|---|
| Residential | 9.29 / capita | -0.68 / capita | 8.61 / capita | 8.16 / capita | Yes |

Note: 1 = VMT Results per Kings CAG model
2 = VMT Mitigation Measures from CAPCOA *Quantifying Greenhouse Gas Mitigation Measures*

- Per the Kings CAG model, the Project's VMT for the residential component was output to be 9.29 VMT per capita which exceeds the City of Lemoore threshold of 8.16 VMT per capita.
- The reduction of VMT per capita from recommended mitigations is 0.68 and reduces the residential VMT per Capita to 8.61.
- As a result, the residential components after applying reductions from mitigations are projected to result in a significant but unavoidable VMT impact.

# Study Participants

**JLB Traffic Engineering, Inc. Personnel**

| | |
|---|---|
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| Susana Maciel, EIT | Project Engineer |
| Matthew Arndt, EIT | Engineer I/II |
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**Persons Consulted:**

| | |
|---|---|
| Travis L. Crawford, AICP | Crawford & Bowen Planning, Inc. |
| Jeff Roberts | Assemi Group, Inc. |
| Steve Brandt | City of Lemoore |
| Judy Holwell | City of Lemoore |
| Dominic Tyburski | County of Kings |
| Michael Navarro | Caltrans |
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## References

California Air Pollution Control Officers Association. 2010. "Quantifying Greenhouse Gas Mitigation Measures: A Resource For Local Government To Assess Emission Reductions From Greenhouse Gas Mitigation Measures". Sacramento: State of California.

California Department of Transportation. 2020. "California Highway Design Manual". Sacramento: State of California.

California Department of Transportation. 2020. "California Manual On Uniform Traffic Control Devices, FHWA's MUTCD 2009 Edition, including Revisions 1 & 2 as amended for use in California ". Sacramento: 2014 ed. State of California, pp.1-1419.

California Department of Transportation. 2002. "Guide For The Preparation Of Traffic Impact Studies". State of California, pp.1-19. 2014.

City of Lemoore. 2008. "City of Lemoore 2030 General Plan". Lemoore: City of Lemoore, Ch. 4.

County of Kings. 2010. "2035 Kings County General Plan". Kings: County of Kings, Circulation Element.

County of Kings. 2011. "2011 Kings County Regional Bicycle Plan". Kings: County of Kings, pp.1-70.

Governor's Office of Planning and Research. 2018. Technical Advisory On Evaluating Transportation Impacts In CEQA. Ebook. Sacramento: State of California, pp.1-34. Available at: <https://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf> [Accessed 20 January 2021].

Institute of Transportation Engineers. 2017. "Trip Generation Manual". Washington: Institute of Transportation Engineers. Vol. 1-3.

# Appendix A: VMT Output and Mitigation Measures



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| TAZ | CITY | Population | Employment | Home Based Production VMT | Home Based Work Attraction VMT | VMT per Capita | VMT per Employment |
|---|---|---|---|---|---|---|---|
| 949 | 0 | 477 | 0 | 3521.30 | 0.00 | 7.38 | 0.00 |
| 950 | 0 | 740 | 0 | 7141.56 | 0.00 | 9.65 | 0.00 |
| 951 | 0 | 1128 | 0 | 11113.85 | 0.00 | 9.85 | 0.00 |

# Lacey Ranch VMT Analysis

| | | | |
|---|---|---|---|
| | | TAZ: | **Average** |
| | | Land Use: | Residential |
| | | Kings CAG Total Project VMT Output: | 21776.71 |
| | | Project Total Population (based on Kings CAG Data): | 2345.00 |
| | | Kings CAG Project Select Zone VMT per Capita Output: | 9.29 |
| | | *County of Kings Average VMT per Capita (Based on Kings CAG Model):* | *9.60* |
| | | *City of Lemoore VMT Threshold (15% reduction to the County of Kings Average VMT per Capita):* | *8.16* |
| | | Target VMT Satisfied? | FALSE |
| | | % deviation from target threshold: | 12.16% |
| *Measure #* | *VMT Mitigation* | *Grouped with* | *VMT Reduction Rate (%)* |
| | *Land Use/Location* | | |
| LUT-4 | Increase Destination Accessibility | N/A | 6.67% |
| LUT-8 | Locate Project near Bike Path/Bike Lane | LUT-4 | N/A |
| LUT-9 | Improve Design of Development | N/A | 7.33% |
| | | **Land Use/Location Category VMT Reduction (%)** | **13.51%** |
| | | **Max. Land Use/Location Category VMT Reduction (%)** | **5.00%** |
| | *Neighborhood/Site Enhancements* | | |
| SDT-1 | Provide Pedestrian Network Improvements | N/A | 2.00% |
| SDT-2 | Provide Traffic Calming Measures | N/A | 0.50% |
| SDT-5 | Incorporate Bike Lane Street Design (on-site) | LUT-9 | N/A |
| SDT-7 | Provide Bike Parking with Multi-Unit Residential Projects | LUT-9 | N/A |
| SDT-9 | Dedicate Land for Bike Trails | LUT-9 | N/A |
| | | **Neighborhood/Site Enhancements Category VMT Reduction (%)** | **2.49%** |
| | | **Max. Neighborhood/Site Enhancements Category VMT Reduction (%)** | **5.00%** |
| | | **Transportation Cross-Category VMT Reduction (%)** | **7.37%** |
| | | **Max. Transportation Cross-Category VMT Reduction (%)** | **10.00%** |
| | | Project VMT with Mitigation: | 8.61 |
| | | VMT Reduction from Mitigations: | 0.68 |
| | | *City of Lemoore VMT Threshold:* | *8.16* |
| | | Target VMT Satisfied? | FALSE |

# Chart 6-2: Transportation Strategies Organization

Transportation Measures (Five Subcategories) Global Maximum Reduction (all VMT): urban = 75%; compact infill = 40%; suburban center or suburban with NEV = 20%; suburban = 15%

Global Cap for Road Pricing needs further study

| Transportation Measures (Four Categories) Cross-Category Max Reduction (all VMT): urban = 70%; compact infill = 35%; suburban center or suburban with NEV = 15%; suburban = 10% | | | | Max Reduction = 15% overall; work VMT = 25%; school VMT = 65%; | Max Reduction = 25% (all VMT) | |
|---|---|---|---|---|---|---|
| **Land Use / Location**<br>Max Reduction: urban = 65%; compact infill = 30%; suburban center = 10%; suburban = 5% | **Neighborhood / Site Enhancement**<br>Max Reduction: without NEV = 5%; with NEV = 15% | **Parking Policy / Pricing**<br>Max Reduction = 20% | **Transit System Improvements**<br>Max Reduction = 10% | **Commute Trip Reduction** (assumes mixed use)<br>Max Reduction = 25% (work VMT) | **Road Pricing Management**<br>Max Reduction = 25% | **Vehicles** |
| Density (30%) | Pedestrian Network (2%) 2.00% | Parking Supply Limits (12.5%) | Network Expansion (8.2%) | CTR Program Required = 21% work VMT Voluntary = 6.2% work VMT | Cordon Pricing (22%) | Electrify Loading Docks |
| Design (21.3%) 7.33% | Traffic Calming (1%) 0.5% | Unbundled Parking Costs (13%) | Service Frequency / Speed (2.5%) | Transit Fare Subsidy (20% work VMT) | Traffic Flow Improvements (45% $CO_2$) | Utilize Alternative Fueled Vehicles |
| Location Efficiency (65%) | NEV Network (14.4) <NEV Parking> | On-Street Market Pricing (5.5%) | Bus Rapid Transit (3.2%) | Employee Parking Cash-out (7.7% work VMT) | Required Contributions by Project | Utilize Electric or Hybrid Vehicles |
| Diversity (30%) | Car Share Program (0.7%) | Residential Area Parking Permits | Access Improvements | Workplace Parking Pricing (19.7% work VMT) | | |
| Destination Accessibility (20%) 6.67% | Bicycle Network <Lanes> <Parking> <Land Dedication for Trails> N/A | | Station Bike Parking | Alternative Work Schedules & Telecommute (5.5% work VMT) | | |
| Transit Accessibility (25%) | Urban Non-Motorized Zones | | Local Shuttles | CTR Marketing (5.5% work VMT) | | |
| BMR Housing (1.2%) | | | Park & Ride Lots* | Employer-Sponsored Vanpool/Shuttle (13.4% work VMT) | | |
| Orientation Toward Non-Auto Corridor | | | | Ride Share Program (15% work VMT) | | |
| Proximity to Bike Path N/A | | | | Bike Share Program | | |
| | | | | End of Trip Facilities | | |
| | | | | Preferential Parking Permit | | |
| | | | | School Pool (15.8% school VMT) | | |
| | | | | School Bus (6.3% school VMT) | | |

*Note: Strategies in bold text are primary strategies with reported VMT reductions; non-bolded strategies are support or grouped strategies.*

### 3.1.4 Increase Destination Accessibility

**Range of Effectiveness:** 6.7 – 20% vehicle miles traveled (VMT) reduction and therefore 6.7-20% reduction in GHG emissions.

**Measure Description:**

The project will be located in an area with high accessibility to destinations. Destination accessibility is measured in terms of the number of jobs or other attractions reachable within a given travel time, which tends to be highest at central locations and lowest at peripheral ones. The location of the project also increases the potential for pedestrians to walk and bike to these destinations and therefore reduces the VMT.

**Measure Applicability:**

- Urban and suburban context
- Negligible impact in a rural context
- Appropriate for residential, retail, office, industrial and mixed-use projects

**Baseline Method:**

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The $CO_2$ emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

**Inputs:**

The following information needs to be provided by the Project Applicant:

- Distance to downtown or major job center

**Mitigation Method:**

% VMT Reduction = Center Distance * B [not to exceed 30%]

Where

Center Distance = Percentage decrease in distance to downtown or major job center versus typical ITE suburban development = (distance to downtown/job center for typical ITE development – distance to downtown/job center for project) / (distance to downtown/job center for typical ITE development)

Center Distance = 12 - Distance to downtown/job center for project) / 12
See Appendix C for detail

B = Elasticity of VMT with respect to distance to downtown or major job center (0.20 from [1])

**Assumptions:**
Data based upon the following references:

[1] Ewing, R., and Cervero, R., "Travel and the Built Environment - A Meta-Analysis." Journal of the American Planning Association, <to be published> (2010). Table 4.

**Emission Reduction Ranges and Variables:**

| Pollutant | Category Emissions Reductions[38] |
|---|---|
| $CO_2e$ | 6.7 – 20% of running |
| PM | 6.7 – 20% of running |
| CO | 6.7 – 20% of running |
| NOx | 6.7 – 20% of running |
| $SO_2$ | 6.7 – 20% of running |
| ROG | 4 – 12% of total |

**Discussion:**
The VMT reductions for this strategy are based on changes in distance to key destinations versus the standard suburban distance in North America. This distance is used as a baseline to mirror the distance to destinations reflected in the land uses for the ITE Trip Generation Manual, which is the baseline method for determining VMT.

The purpose for the 30% cap on % VMT reduction is to limit the influence of any single environmental factor (such as destination accessibility). This emphasizes that community designs that implement multiple land use strategies (such as density,

[38] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

design, diversity, destination, etc.) will show more of a reduction than relying on improvements from a single land use factor.

**Example:**

Sample calculations are provided below:

- Low Range % VMT Reduction (8 miles to downtown/job center) =
$$\frac{12-8}{12}\times 0.20 = 6.7\%$$
- High Range % VMT Reduction (0.1 miles to downtown/job center) =
$$\frac{12-0.1}{12}\times 0.20 = 20.0\%$$

**Preferred Literature:**

- -0.20 = elasticity of VMT with respect to job accessibility by auto
- -0.20 = elasticity of VMT with respect to distance to downtown

The Ewing and Cervero report [1] finds that VMT is strongly related to measures of accessibility to destinations. The weighted average elasticity of VMT with respect to job accessibility by auto is -0.20 (looking at five total studies). The weighted average elasticity of VMT with respect to distance to downtown is -0.22 (looking at four total studies, of which one controls for self selection[39]).

**Alternative Literature:**

- 10-30% reduction in vehicle trips

The VTPI literature [2] suggests a 10-30% reduction in vehicle trips for "smart growth" development practices that result in more compact, accessible, multi-modal communities where travel distances are shorter, people have more travel options, and it is possible to walk and bicycle more.

**Alternative Literature References:**

[2] Litman, T., 2009. "Win-Win Emission Reduction Strategies." Victoria Transport Policy Institute (VTPI). Website: http://www.vtpi.org/wwclimate.pdf. Accessed March 2010. (p. 7, Table 3)

[39] Self selection occurs when residents or employers that favor travel by non-auto modes choose locations where this type of travel is possible. They are therefore more inclined to take advantage of the available options than a typical resident or employee might otherwise be.

**Other Literature Reviewed:**

None

## Project-Specific VMT Reduction Calculation

**% VMT Reduction = ((12-8)/12) * 0.20 = 6.67%**

### 3.1.8 Locate Project near Bike Path/Bike Lane

**Range of Effectiveness:** Grouped strategy. [See LUT-4]

**Measure Description:**

A Project that is designed around an existing or planned bicycle facility encourages alternative mode use. The project will be located within 1/2 mile of an existing Class I path or Class II bike lane. The project design should include a comparable network that connects the project uses to the existing offsite facilities.

This measure is most effective when applied in combination of multiple design elements that encourage this use. Refer to Increase Destination Accessibility (LUT-4) strategy. The benefits of Proximity to Bike Path/Bike Lane are small as a standalone strategy. The strategy should be grouped with the Increase Destination Accessibility strategy to increase the opportunities for multi-modal travel.

**Measure Applicability:**

- Urban or suburban context; may be applicable in a rural master planned community
- Appropriate for residential, retail, office, industrial, and mixed-use projects

**Alternative Literature:**

*Alternate:*

- 0.625% reduction in vehicle miles traveled (VMT)

As a rule of thumb, the *Center for Clean Air Policy (CCAP) Guidebook* [1] attributes a 1% to 5% reduction associated with comprehensive bicycle programs. Based on the CCAP guidebook, the TIAX report allots 2.5% reduction for all bicycle-related measures and a 1/4 of that for this measure alone. (This information is based on a TIAX review for SMAQMD).

**Alternative Literature References:**

[1] Center for Clean Air Policy (CCAP). *Transportation Emission Guidebook*. http://www.ccap.org/safe/guidebook/guide_complete.html; TIAX Results of 2005 Literature Search Conducted by TIAX on behalf of SMAQMD.

**Other Literature Reviewed:**

None

### 3.1.9 Improve Design of Development

**Range of Effectiveness:** 3.0 – 21.3% vehicle miles traveled (VMT) reduction and therefore 3.0-21.3% reduction in GHG emissions.

**Measure Description:**

The project will include improved design elements to enhance walkability and connectivity. Improved street network characteristics within a neighborhood include street accessibility, usually measured in terms of average block size, proportion of four-way intersections, or number of intersections per square mile. Design is also measured in terms of sidewalk coverage, building setbacks, street widths, pedestrian crossings, presence of street trees, and a host of other physical variables that differentiate pedestrian-oriented environments from auto-oriented environments.

**Measure Applicability:**

- Urban and suburban context
- Negligible impact in a rural context
- Appropriate for residential, retail, office, industrial and mixed-use projects

**Baseline Method:**

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The $CO_2$ emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

**Inputs:**

The following information needs to be provided by the Project Applicant:

- Number of intersections per square mile

**Mitigation Method:**

$$\% \text{ VMT Reduction} = \text{Intersections} * B$$

Where

Intersections = Percentage increase in intersections versus a typical ITE suburban development

$$= \frac{\text{Intersections per square mile of project - Intersections per square mile of typical ITE suburban development}}{\text{Intersections per square mile of typical ITE suburban development}}$$

$$= \frac{\text{Intersections per square mile of project} - 36}{36}$$

See Appendix C for detail [not to exceed 500% increase]

B = Elasticity of VMT with respect to percentage of intersections (0.12 from [1])

**Assumptions:**

Data based upon the following references:

[1] Ewing, R., and Cervero, R., "Travel and the Built Environment - A Meta-Analysis." *Journal of the American Planning Association*, <to be published> (2010). Table 4.

**Emission Reduction Ranges and Variables:**

| Pollutant | Category Emissions Reductions[43] |
|---|---|
| $CO_2e$ | 3.0 – 21.3% of running |
| PM | 3.0 – 21.3% of running |
| CO | 3.0 – 21.3% of running |
| NOx | 3.0 – 21.3% of running |
| $SO_2$ | 3.0 – 21.3% of running |
| ROG | 1.8 – 12.8% of total |

**Discussion:**

The VMT reductions for this strategy are based on changes in intersection density versus the standard suburban intersection density in North America. This standard density is used as a baseline to mirror the density reflected in the *ITE Trip Generation Manual*, which is the baseline method for determining VMT.

The calculations in the Example section look at a low and high range of intersection densities. The low range is simply a slightly higher density than the typical ITE

[43] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

development. The high range uses an average intersection density of mixed use/transit-oriented development sites (TOD Site surveys in the Bay Area for *Candlestick-Hunters Point Phase II TIA,* Fehr & Peers, 2009).

There are two separate maxima noted in the fact sheet: a cap of 500% on the allowable percentage increase of intersections per square mile (variable A) and a cap of 30% on % VMT reduction. The rationale for the 500% cap is that there are diminishing returns to any change in environment. For example, it is reasonably doubtful that increasing intersection density by a factor of six instead of five would produce any additional change in travel behavior. The purpose for the 30% cap is to limit the influence of any single environmental factor (such as design). This emphasizes that community designs that implement multiple land use strategies (such as density, design, diversity, etc.) will show more of a reduction than relying on improvements from a single land use factor.

**Example:**

Sample calculations are provided below:

- Low Range % VMT Reduction (45 intersections per square mile) = (45 – 36) / 36 * 0.12 = 3.0%
- High Range % VMT Reduction (100 intersections per square mile) = (100 – 36) / 36 * 0.12 = 21.3%

**Preferred Literature:**

- -0.12 = elasticity of VMT with respect to design (intersection/street density)
- -0.12 = elasticity of VMT with respect to design (% of 4-way intersections)

Ewing and Cervero's [1] synthesis showed a strong relationship of VMT to design elements, second only to destination accessibility. The weighted average elasticity of VMT to intersection/street density was -0.12 (looking at six studies). The weighted average elasticity of VMT to percentage of 4-way intersections was -0.12 (looking at four studies, of which one controlled for self-selection[44]).

**Alternative Literature:**

*Alternate:*

- 2-19% reduction in VMT

[44] Self selection occurs when residents or employers that favor travel by non-auto modes choose locations where this type of travel is possible. They are therefore more inclined to take advantage of the available options than a typical resident or employee might otherwise be.

*Growing Cooler* [2] looked at various reports which studied the effect of site design on VMT, showing a range of 2-19% reduction in VMT. In each case, alternative development plans for the same site were compared to a baseline or trend plan. Results suggest that VMT and $CO_2$ per capita decline as site density increases as well as the mix of jobs, housing, and retail uses become more balanced. *Growing Cooler* notes that the limited number of studies, differences in assumptions and methodologies, and variability of results make it difficult to generalize.

*Alternate:*

- 3 – 17% shift in mode share from auto to non-auto

The Marshall and Garrick paper [3] analyzes the differences in mode shares for grid and non-grid ("tree") neighborhoods. For a city with a tributary tree street network, a neighborhood with a tree network had auto mode share of 92% while a neighborhood with a grid network had auto mode share of 89% (3% difference). For a city with a tributary radial street network, a tree neighborhood had auto mode share of 97% while a grid neighborhood had auto mode share of 84% (13% difference). For a city with a grid network, a tree neighborhood had auto mode share of 95% while a grid neighborhood had auto mode share of 78% (17% difference). The research is based on 24 California cities with populations between 30,000 and 100,000.

**Alternative Literature References:**

[2] Ewing, et al, 2008. Growing Cooler – The Evidence on Urban Development and Climate Change. Urban Land Institute.

[3] Marshall and Garrick, 2009. "The Effect of Street Network Design on Walking and Biking." Submitted to the 89th Annual Meeting of Transportation Research Board, January 2010. (Table 3)

**Other Literature Reviewed:**

None

## Project-Specific VMT Reduction Calculation

**% VMT Reduction = (((14/0.24)-36)/36) * 0.12 = 7.33%**

## 3.2 Neighborhood/Site Enhancements

### 3.2.1 Provide Pedestrian Network Improvements

**Range of Effectiveness:** 0 - 2% vehicle miles traveled (VMT) reduction and therefore 0 - 2% reduction in GHG emissions.

**Measure Description:**

Providing a pedestrian access network to link areas of the Project site encourages people to walk instead of drive. This mode shift results in people driving less and thus a reduction in VMT. The project will provide a pedestrian access network that internally links all uses and connects to all existing or planned external streets and pedestrian facilities contiguous with the project site. The project will minimize barriers to pedestrian access and interconnectivity. Physical barriers such as walls, landscaping, and slopes that impede pedestrian circulation will be eliminated.

**Measure Applicability:**

- Urban, suburban, and rural context
- Appropriate for residential, retail, office, industrial and mixed-use projects
- Reduction benefit only occurs if the project has both pedestrian network improvements on site and connections to the larger off-site network.

**Baseline Method:**

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The $CO_2$ emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

**Inputs:**

The project applicant must provide information regarding pedestrian access and connectivity within the project and to/from off-site destinations.

## Mitigation Method: Project-Specific VMT Reduction Calculation

| Estimated VMT Reduction | Extent of Pedestrian Accommodations | Context |
|---|---|---|
| 2% | Within Project Site and Connecting Off-Site | Urban/Suburban |
| 1% | Within Project Site | Urban/Suburban |
| < 1% | Within Project Site and Connecting Off-Site | Rural |

**Assumptions:**

Data based upon the following references:

- Center for Clean Air Policy (CCAP) Transportation Emission Guidebook. http://www.ccap.org/safe/guidebook/guide_complete.html (accessed March 2010)
- 1000 Friends of Oregon (1997) "Making the Connections: A Summary of the LUTRAQ Project" (p. 16): http://www.onethousandfriendsoforegon.org/resources/lut_vol7.html

**Emission Reduction Ranges and Variables:**

| Pollutant | Category Emissions Reductions[45] |
|---|---|
| $CO_2e$ | 0 - 2% of running |
| PM | 0 - 2% of running |
| CO | 0 - 2% of running |
| NOx | 0 - 2% of running |
| $SO_2$ | 0 - 2% of running |
| ROG | 0 – 1.2% of total |

**Discussion:**

As detailed in the preferred literature section below, the lower range of 1 – 2% VMT reduction was pulled from the literature to provide a conservative estimate of reduction potential. The literature does not speak directly to a rural context, but an assumption was made that the benefits will likely be lower than a suburban/urban context.

**Example:**

N/A – calculations are not needed.

**Preferred Literature:**

[45] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

- 1 - 2% reduction in VMT

The Center for Clean Air Policy (CCAP) attributes a 1% reduction in VMT from pedestrian-oriented design assuming this creates a 5% decrease in automobile mode share (e.g. auto split shifts from 95% to 90%). This mode split is based on the Portland Regional Land Use Transportation and Air Quality (LUTRAQ) project. The LUTRAQ analysis also provides the high end of 10% reduction in VMT. This 10% assumes the following features:

- – Compact, mixed-use communities
- – Interconnected street network
- – Narrower roadways and shorter block lengths
- – Sidewalks
- – Accessibility to transit and transit shelters
- – Traffic calming measures and street trees
- – Parks and public spaces

Other strategies (development density, diversity, design, transit accessibility, traffic calming) are intended to account for the effects of many of the measures in the above list. Therefore, the assumed effectiveness of the Pedestrian Network measure should utilize the lower end of the 1 - 10% reduction range. If the pedestrian improvements are being combined with a significant number of the companion strategies, trip reductions for those strategies should be applied as well, based on the values given specifically for those strategies in other sections of this report. Based upon these findings, and drawing upon recommendations presented in the alternate literature below, the recommended VMT reduction attributable to pedestrian network improvements, above and beyond the benefits of other measures in the above bullet list, should be 1% for comprehensive pedestrian accommodations within the development plan or project itself, or 2% for comprehensive internal accommodations and external accommodations connecting to off-site destinations.

**Alternative Literature:**

*Alternate:*

- Walking is three times more common with enhanced pedestrian infrastructure
- 58% increase in non-auto mode share for work trips

The Nelson\Nygaard [1] report for the City of Santa Monica Land Use and Circulation Element EIR summarized studies looking at pedestrian environments. These studies have found a direct connection between non-auto forms of travel and a high quality pedestrian environment. Walking is three times more common with communities that have pedestrian friendly streets compared to less pedestrian friendly communities. Non-auto mode share for work trips is 49% in a pedestrian friendly community, compared to 31% in an auto-oriented community. Non-auto mode share for non-work trips is 15%, compared to 4% in an auto-oriented community. However, these effects also depend upon other aspects of the pedestrian friendliness being present, which are accounted for separately in this report through land use strategy mitigation measures such as density and urban design.

*Alternate:*

- 0.5% - 2.0% reduction in VMT

The Sacramento Metropolitan Air Quality Management District (SMAQMD) Recommended Guidance for Land Use Emission Reductions [2] attributes 1% reduction for a project connecting to *existing* external streets and pedestrian facilities. A 0.5% reduction is attributed to connecting to *planned* external streets and pedestrian facilities (which must be included in a pedestrian master plan or equivalent). Minimizing pedestrian barriers attribute an additional 1% reduction in VMT. These recommendations are generally in line with the recommended discounts derived from the preferred literature above.

**Preferred and Alternative Literature Notes:**

[1] Nelson\Nygaard, 2010. City of Santa Monica Land Use and Circulation Element EIR Report, Appendix – Santa Monica Luce Trip Reduction Impacts Analysis (p.401). http://www.shapethefuture2025.net/

Nelson\Nygaard looked at the following studies: Anne Vernez Moudon, Paul Hess, Mary Catherine Snyder and Kiril Stanilov (2003), Effects of Site Design on Pedestrian Travel in Mixed Use, Medium-Density Environments, http://www.wsdot.wa.gov/research/reports/fullreports/432.1.pdf; Robert Cervero and Carolyn Radisch (1995), Travel Choices in Pedestrian Versus Automobile Oriented Neighborhoods, http://www.uctc.net/papers/281.pdf;

[2] Sacramento Metropolitan Air Quality Management District (SMAQMD) Recommended Guidance for Land Use Emission Reductions. (p. 11) http://www.airquality.org/ceqa/GuidanceLUEmissionReductions.pdf

**Other Literature Reviewed:**

None

### 3.2.2 Provide Traffic Calming Measures

**Range of Effectiveness:** 0.25 – 1.00% vehicle miles traveled (VMT) reduction and therefore 0.25 – 1.00% reduction in GHG emissions.

**Measure Description:**

Providing traffic calming measures encourages people to walk or bike instead of using a vehicle. This mode shift will result in a decrease in VMT. Project design will include pedestrian/bicycle safety and traffic calming measures in excess of jurisdiction requirements. Roadways will be designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips with traffic calming features. Traffic calming features may include: marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts or mini-circles, on-street parking, planter strips with street trees, chicanes/chokers, and others.

**Measure Applicability:**

- Urban, suburban, and rural context
- Appropriate for residential, retail, office, industrial and mixed-use projects

**Baseline Method:**

See introduction to transportation section for a discussion of how to estimate trip rates and VMT. The $CO_2$ emissions are calculated from VMT as follows:

$$CO_2 = VMT \times EF_{running}$$

Where:

VMT = vehicle miles traveled

$EF_{running}$ = emission factor for running emissions

**Inputs:**

The following information needs to be provided by the Project Applicant:

- Percentage of streets within project with traffic calming improvements
- Percentage of intersections within project with traffic calming improvements

**Mitigation Method:** **Project-Specific VMT Reduction Calculation**

| | | % of streets with improvements | | | |
|---|---|---|---|---|---|
| | | 25% | 50% | 75% | 100% |
| | | % VMT Reduction | | | |
| % of intersections with improvements | 25% | 0.25% | 0.25% | 0.5% | 0.5% |
| | 50% | 0.25% | 0.5% | 0.5% | 0.75% |
| | 75% | 0.5% | 0.5% | 0.75% | 0.75% |
| | 100% | 0.5% | 0.75% | 0.75% | 1% |

**Assumptions:**

Data based upon the following references:

[1] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.*(p. B-25) http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendices_Complete_102209.pdf

[2] Sacramento Metropolitan Air Quality Management District (SMAQMD) *Recommended Guidance for Land Use Emission Reductions.* (p.13) http://www.airquality.org/ceqa/GuidanceLUEmissionReductions.pdf

**Emission Reduction Ranges and Variables:**

| Pollutant | Category Emissions Reductions[46] |
|---|---|
| $CO_2e$ | 0.25 – 1.00% of running |
| PM | 0.25 – 1.00% of running |
| CO | 0.25 – 1.00% of running |
| NOx | 0.25 – 1.00% of running |
| $SO_2$ | 0.25 – 1.00% of running |
| ROG | 0.15 – 0.6% of total |

**Discussion:**

The table above allows the Project Applicant to choose a range of street and intersection improvements to determine an appropriate VMT reduction estimate. The Applicant will look at the rows on the left and choose the percent of intersections within

[46] The percentage reduction reflects emission reductions from running emissions. The actual value will be less than this when starting and evaporative emissions are factored into the analysis. ROG emissions have been adjusted to reflect a ratio of 40% evaporative and 60% exhaust emissions based on a statewide EMFAC run of all vehicles.

the project which will have traffic calming improvements. Then, the Applicant will look at the columns along the top and choose the percent of streets within the project which will have traffic calming improvements. The intersection cell of the row and column selected in the matrix is the VMT reduction estimate.

Though the literature provides some difference between a suburban and urban context, the difference is small and thus a conservative estimate was used to be applied to all contexts. Rural context is not specifically discussed in the literature but is assumed to have similar impacts.

For a low range, a project is assumed to have 25% of its streets with traffic calming improvements and 25% of its intersections with traffic calming improvements. For a high range, 100% of streets and intersections are assumed to have traffic calming improvements

**Example:**

N/A - No calculations needed.

**Preferred Literature:**

- -0.03 = elasticity of VMT with respect to a pedestrian environment factor (PEF)
- 1.5% - 2.0% reduction in suburban VMT
- 0.5% - 0.6% reduction in urban VMT

*Moving Cooler* [1] looked at Ewing's synthesis elasticity from the Smart Growth INDEX model (-0.03) to estimate VMT reduction for a suburban and urban location. The estimated reduction in VMT came from looking at the difference between the VMT results for Moving Cooler's strategy of pedestrian accessibility only compared to an aggressive strategy of pedestrian accessibility and traffic calming.

The Sacramento Metropolitan Air Quality Management District (SMAQMD) *Recommended Guidance for Land Use Emission Reductions* [2] attributes 0.25 – 1% of VMT reductions to traffic calming measures. The table above illustrates the range of VMT reductions based on the percent of streets and intersections with traffic calming measures implemented. This range of reductions is recommended because it is generally consistent with the effectiveness ranges presented in the other preferred literature for situations in which the effects of traffic calming are distinguished from the other measures often found to co-exist with calming, and because it provides graduated effectiveness estimates depending on the degree to which calming is implemented.

**Alternative Literature:**

None

**Alternative Literature References:**

None

**Other Literature Reviewed:**

None

### 3.2.5 Incorporate Bike Lane Street Design (on-site)

**Range of Effectiveness:** Grouped strategy. [See LUT-9]

**Measure Description:**

The project will incorporate bicycle lanes, routes, and shared-use paths into street systems, new subdivisions, and large developments. These on-street bike accommodations will be created to provide a continuous network of routes, facilitated with markings and signage. These improvements can help reduce peak-hour vehicle trips by making commuting by bike easier and more convenient for more people. In addition, improved bicycle facilities can increase access to and from transit hubs, thereby expanding the "catchment area" of the transit stop or station and increasing ridership. Bicycle access can also reduce parking pressure on heavily-used and/or heavily-subsidized feeder bus lines and auto-oriented park-and-ride facilities.

Refer to Improve Design of Development (LUT-9) strategy for overall effectiveness levels. The benefits of Bike Lane Street Design are small and should be grouped with the Improve Design of Development strategy to strengthen street network characteristics and enhance multi-modal environments.

**Measure Applicability:**

- Urban and suburban context
- Appropriate for residential, retail, office, industrial, and mixed-use projects

**Alternative Literature:**

*Alternate:*

- 1% increase in share of workers commuting by bicycle (for each additional mile of bike lanes per square mile)

Dill and Carr (2003) [1] showed that each additional mile of Type 2 bike lanes per square mile is associated with a 1% increase in the share of workers commuting by bicycle. Note that increasing by 1 mile is significant compared to the current average of 0.34 miles per square mile. Also, an increase in 1% in share of bicycle commuters would double the number of bicycle commuters in many areas with low existing bicycle mode share.

*Alternate:*

- 0.05 – 0.14% annual greenhouse gas (GHG) reduction
- 258 – 830% increase in bicycle community

*Moving Cooler* [2], based off of a national baseline, estimates 0.05% annual reduction in GHG emissions and 258% increase in bicycle commuting assuming 2 miles of bicycle

lanes per square mile in areas with density > 2,000 persons per square mile. For 4 miles of bicycle lanes, estimates 0.09% GHG reductions and 449% increase in bicycle commuting. For 8 miles of bicycle lanes, estimates 0.14% GHG reductions and 830% increase in bicycle commuting. Companion strategies assumed include bicycle parking at commercial destinations, busses fitted with bicycle carriers, bike accessible rapid transit lines, education, bicycle stations, end-trip facilities, and signage.

*Alternate:*

- 0.075% increase in bicycle commuting with each mile of bikeway per 100,000 residents

A before-and-after study by Nelson and Allen (1997) [3] of bicycle facility implementation found that each mile of bikeway per 100,000 residents increases bicycle commuting 0.075%, all else being equal.

**Alternative Literature References:**

[1] Dill, Jennifer and Theresa Carr (2003). “Bicycle Commuting and Facilities in Major U.S. Cities: If You Build Tem, Commuters Will Use Them – Another Look.” *TRB 2003 Annual Meeting CD-ROM*.

[2] Cambridge Systematics. *Moving Cooler: An Analysis of Transportation Strategies for Reducing Greenhouse Gas Emissions.* Technical Appendices. Prepared for the Urban Land Institute. http://www.movingcooler.info/Library/Documents/Moving%20Cooler_Appendix%20B_Effectiveness_102209.pdf

[3] Nelson, Arthur and David Allen (1997). “If You Build Them, Commuters Will Use Them; Cross-Sectional Analysis of Commuters and Bicycle Facilities.” *Transportation Research Record 1578.*

**Other Literature Reviewed:**

None

### 3.2.7 Provide Bike Parking with Multi-Unit Residential Projects

**Range of Effectiveness:** Grouped strategy. [See LUT-9]

**Measure Description:**

Long-term bicycle parking will be provided at apartment complexes or condominiums without garages. Refer to Improve Design of Development (LUT-9) strategy for effectiveness ranges in this category. The benefits of Bike Parking with Multi-Unit Residential Projects have no quantified impacts and should be grouped with the Improve Design of Development strategy to encourage bicycling by providing strengthened street network characteristics and bicycle facilities.

**Measure Applicability:**

- Urban, suburban, or rural contexts
- Appropriate for residential projects

**Alternative Literature:**

No literature was identified that specifically looks at the quantitative impact of including bicycle parking at multi-unit residential sites.

**Alternative Literature References:**

None

**Other Literature Reviewed:**

None

### 3.2.9 Dedicate Land for Bike Trails

**Range of Effectiveness:** Grouped strategy. [See LUT-9]

**Measure Description:**

Larger projects may be required to provide for, contribute to, or dedicate land for the provision of off-site bicycle trails linking the project to designated bicycle commuting routes in accordance with an adopted citywide or countywide bikeway plan.

Refer to Improve Design of Development (LUT-9**)** strategy for ranges of effectiveness in this category. The benefits of Land Dedication for Bike Trails have not been quantified and should be grouped with the Improve Design of Development strategy to strengthen street network characteristics and improve connectivity to off-site bicycle networks.

**Measure Applicability:**

- Urban, suburban, or rural contexts
- Appropriate for large residential, retail, office, mixed use, and industrial projects

**Alternative Literature:**

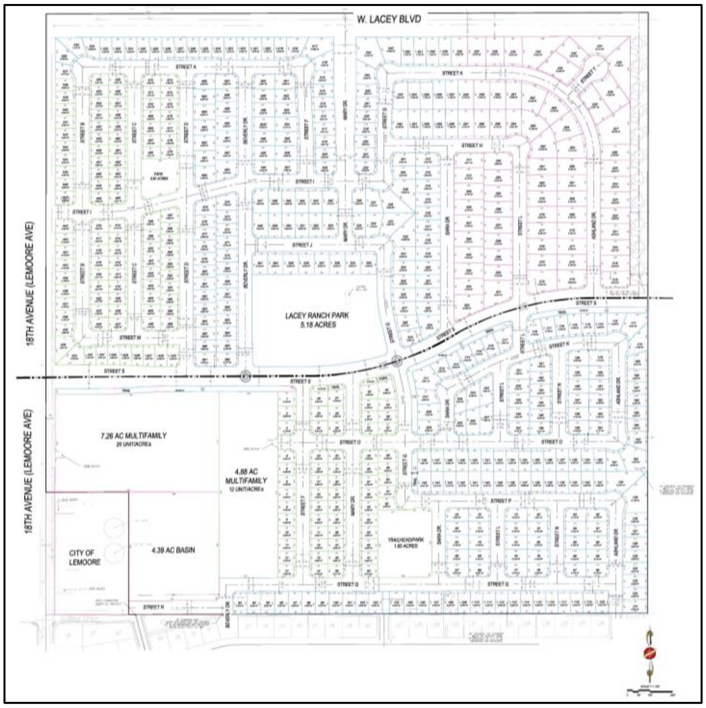
No literature was identified that specifically looks at the quantitative impact of implementing land dedication for bike trails.

**Alternative Literature References:**

None

**Other Literature Reviewed:**

None




# FINAL ENVIRONMENTAL IMPACT REPORT (STATE CLEARINGHOUSE #2020080314)

## Lacey Ranch Area Master Plan Project

April 2022

PREPARED FOR:

City of Lemoore
711 Cinnamon Drive
Lemoore, CA 93245

PREPARED BY:

Crawford & Bowen Planning, Inc.
113 N. Church Street, Suite 302
Visalia, CA 93291

# Final Environmental Impact Report

# Lacey Ranch Area Master Plan Project

State Clearinghouse #2020080314

Prepared for: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Lemoore, CA 93245
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Contact: Nathan Olson, City Manager


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April 2022

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# CHAPTER ONE - Introduction

## Introduction

As defined by Section 15050 of the California Environmental Quality Act (CEQA) Guidelines, the City of Lemoore (City) is the Lead Agency for the preparation of the Environmental Impact Report (EIR) for the Lacey Ranch Area Mater Plan Project (Project or proposed Project, SCH No 2020080314). The Final EIR presents the environmental information and analyses that have been prepared for the proposed Project, including comments received addressing the adequacy of the Draft EIR, and responses to those comments. In addition to the responses to comments, clarifications, corrections, or minor revisions have been made to the Draft EIR. The Final EIR, which includes the responses to comments, the Draft EIR, and the Mitigation, Monitoring, and Reporting Program, will be used by the Lemoore Planning Commission and the City Council in the decision-making process for the proposed Project.

This Final EIR is an informational document intended to disclose to the decision makers of the City, and the public, the environmental consequences of approving and implementing the Project or one of the alternatives to the proposed Project, which are described in the Draft EIR. All written comments received during the public review period (January 25, 2022 through March 11, 2022) of the Draft EIR are addressed in this Final EIR.

The responses in the Final EIR clarify, correct, and/or amplify text in the Draft EIR. Also included in the Final EIR are minor text changes made at the initiative of the City (the Lead Agency) and in response to comments (see the "Errata" section in Chapter Three of this Final EIR). Additions to the Draft EIR text are shown with underline and text removed from the Draft EIR is shown with ~~strikethrough~~. The revisions, as outlined below, fall within the scope of the original project analysis included in the Draft EIR and do not result in an increase to any identified impacts or produce any new impacts. No new significant environmental impact would result from the changes or from a new mitigation measure proposed to be implemented. Therefore, no significant revisions have been made which would require recirculation of the Draft EIR pursuant to CEQA Guidelines Section 15088.5 (Recirculation of an EIR Prior to Certification). The Final EIR was prepared in accordance with the California Environmental Quality Act (CEQA) (California Public Resources Code Sections 21000-21177).

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## Summary of Project Description

Within the Lacey Ranch Area Master Plan, the Project applicant is proposing to subdivide and develop approximately 156-acres of land into a planned residential community with a mix of single-family and multi-family housing units. The exact number of each housing type may vary slightly, depending on final density, however, there will be a maximum of 825 housing units in total. Approximately 75% of the site will be developed with single family housing units on a variety of lot sizes, with the remainder to be developed with multi-family housing and parks/trails. The Project applicant proposes to annex the site into the City Limits of Lemoore and will require a General Plan Amendment and Zone Change to change the land use designations from agriculture to residential. The Project will also require a modification to the City's Sphere of Influence.

**Project Location**

The proposed Project is located on approximately 156-acres immediately north of the City of Lemoore in Kings County and is bounded by W. Lacey Blvd to the north and 18$^{th}$ Avenue to the west. An existing residential development abuts the Project's southern boundary. The Project is on assessor parcel number 021-030-057-000.

**Project Objectives**

In accordance with CEQA Guidelines Section 15124(b), the following are the City of Lemoore's Project objectives:

1. To provide a variety of housing opportunities with a range of densities, styles, sizes and values that will be designed to satisfy existing and future demand for quality housing in the area.
2. To provide a sense of community and walkability within the development through the use of street patterns, parks/trails, landscaping and other project amenities.
3. To provide a residential development that is compatible with surrounding land uses and is near major services.
4. To provide a residential development that assists the City in meeting its General Plan and Housing Element requirements and objectives.

## CEQA Evaluation Background

**Initial Study / Notice of Preparation**

In accordance with CEQA, the City of Lemoore circulated an Initial Study (IS) and Notice of Preparation (NOP) (referred to collectively as "IS/NOP") of a Draft EIR for the proposed Project from August 20, 2020 through September 21, 2020 to trustee and responsible agencies, the State Clearinghouse (SCH #2020080314), and the public. The IS/NOP analyzed the following CEQA Appendix G topics, and it was determined that no impacts would occur that would require analysis in the Draft EIR.

1. Aesthetics
2. Mineral Resources
3. Recreation
4. Wildfire

Three agency comments on the IS/NOP related to the EIR analysis were presented or submitted during the public review period. The letters are summarized as follows:

1. **California Department of Conservation – Geologic Energy Management Division:** Provided regulations pertaining to handling of any known oil or gas wells located within the Project boundaries.
2. **California Department of Conservation – Division of Land Resource Protection:** Provided regulations pertaining to conversion of farmland to urban uses.
3. **Pacific Gas and Electric Company:** Provided information and regulations pertaining to gas and electric facilities that would serve the Project.

These comment letters were identified and incorporated into the Draft EIR. In addition, pursuant to Section 15206 of the State CEQA Guidelines, the lead agency is required to conduct at least one scoping meeting for all projects of statewide, regional, or area-wide significance. The scoping meeting is for jurisdictional agencies and interested persons or groups to provide comments regarding (but not limited to) the range of actions, alternatives, mitigation measures, and environmental effects to be analyzed to be analyzed in the Draft EIR. The City of Lemoore hosted a scoping meeting on September 14, 2020, which was during the 30-day public review period of the IS/NOP.

**Draft EIR**

The Draft EIR was properly noticed and circulated for public review and comment for 45 days, from January 25, 2022 through March 11, 2022. The Notice of Availability was published in the *Hanford Sentinel* newspaper. The Draft EIR and Appendices were sent to the State Clearinghouse for distribution and notices were mailed to adjacent landowners, local agencies and other interested individuals. The City received four comment letters and two emailed comments on the Draft EIR. These letters and emails are reproduced in their entirety in Chapter Two of this Final EIR and responses are shown after each letter.

These comments and responses that make up the Final EIR, in combination with the Draft EIR and Appendices, constitute the EIR that will be considered for certification by the decision makers of the City of Lemoore.

## CEQA Requirements

Under CEQA, the Lead Agency must prepare and certify a Final EIR prior to a proposed project being approved. The contents of a Final EIR are specified in Section 15132 of the CEQA Guidelines, which states that a Final EIR must consist of the following:

1. The Draft EIR or a revision of the Draft EIR.
2. Comments and recommendations received on the Draft EIR either verbatim or in summary.
3. A list of persons, organizations, and public agencies commenting on the Draft EIR.
4. The responses of the Lead Agency to significant environmental points raised in the review and consultation process.
5. Any other information added by the Lead Agency.

The Lead Agency must provide each public agency that commented on the Draft EIR with a copy of the Lead Agency's response to such comments a minimum of 10 days before certifying the Final EIR.

## Use of the Final EIR

The Final EIR allows the public and the City an opportunity to review revisions to the Draft EIR and the responses to comments received during the Draft EIR's public review period. The Final EIR serves as the environmental document to inform the City of the environmental consequences of the proposed Project, either in whole or in part, or one of the alternatives to the Project discussed in the Draft EIR.

As required by Section 15090(a)(1)-(3) of the CEQA Guidelines, a Lead Agency, in certifying a Final EIR, must make the following three determinations:

1. The Final EIR has been completed in compliance with CEQA.
2. The Final EIR was presented to the decision-making body of the Lead Agency, and the decision-making body reviewed and considered the information in the Final EIR prior to approving the project.
3. The Final EIR reflects the Lead Agency's independent judgement and analysis.

As required by Section 15091 of the CEQA Guidelines, a public agency cannot approve or carry out a project for which an EIR has been certified that identifies one or more significant environmental effects of the project unless the public agency makes one or more written findings (Findings of Fact) for each of those significant effects, accompanied by a brief explanation of the rationale to reach findings supported by substantial evidence in the record. The possible findings are as follows:

1. Changes or alterations have been required in or incorporated into the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR.
2. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.
3. Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the Final EIR.

Additionally, pursuant to Section 15093(b) of the CEQA Guidelines, when a Lead Agency approves a project that would result in significant unavoidable impacts that are disclosed in the Final EIR, the agency must state in writing the reasons supporting the approval. The Statement of Overriding Considerations must be supported by substantial evidence in the Lead Agency's administrative record. The Findings of Fact (Section 15091) and Statement of Overriding Considerations (Section 15093(b)) have been provided to the City for consideration.

If the City approves the proposed Project, and as part of that action adopts mitigation measures, the City will also adopt a Mitigation Monitoring and Reporting Program (see Public Resources Code Section 21081.6).

# CHAPTER TWO – Comments and Responses

## Introduction

This chapter of the Final EIR contains a copy of each of the written comments received from the public and other agencies with jurisdiction over the proposed Project, followed by responses to each comment. Each letter is numbered (e.g. Letter 1, Letter 2, etc.) and is bracketed to delineate individual comments within each letter.

A total of four comment letters and two emails (both correspondence types are referred to as "Comment Letters") were received from the following agencies:

| | |
|---|---|
| Comment Letter 1<br>Cynthia Echavarria Baruch<br>Community Planning Liaison Officer<br>Naval Air Station Lemoore<br>Lemoore NAS, CA 93246<br>**February 1, 2022** | Comment Letter 4<br>Monique Wilber<br>Conservation Program Support Supervisor<br>CA Dept. Of Conservation<br>Division of Land Resource Protection<br>715 P Street, MS 1904<br>Sacramento, CA 95814<br>**February 25, 2022** |
| Comment Letter 2<br>Mark Ghann – Amoah<br>District Deputy<br>CA Dept. of Conservation<br>Geologic Energy Management Division<br>801 K Street, MS 18-05<br>Sacramento, CA 95814<br>**February 8, 2022** | Comment Letter 5<br>Mark Montelongo<br>Program Manager<br>San Joaquin Air Pollution Control District<br>1990 East Gettysburg Ave.<br>Fresno, CA 93726<br>**March 9, 2022** |
| Comment Letter 3<br>Cherie Clark<br>Air Quality Specialist II<br>San Joaquin Air Pollution Control District<br>1990 East Gettysburg Ave.<br>Fresno, CA 93726<br>**February 22, 2022** | Comment Letter 6<br>Julie Vance<br>Regional Manager<br>CA Dept. of Fish & Wildlife – Central Division<br>1234 E. Shaw Ave.<br>Fresno, CA 93710<br>**March 11, 2022** |

# Comment Letters

Comment Letter 1
Cynthia Echavarria Baruch
Community Planning Liaison Officer
Naval Air Station Lemoore
Lemoore NAS, CA 93246
**February 1, 2022**

Comment Letter 1

**From:** Kristie Baley
**To:** Travis Crawford; Steve Brandt (steve.brandt@qkinc.com); Jaymie Brauer
**Subject:** Lacey Ranch - Comment Received - NOA Draft EIR - Lemoore NAS
**Date:** Tuesday, February 1, 2022 9:11:18 AM
**Attachments:** 1.pdf

Please update noticing and correspondence records for NAS Lemoore as shown below.

*Kristie Baley*
*Management Analyst*
*711 W Cinnamon Drive*
*Lemoore, CA 93245*
*559.924.6744 ext. 740*

**From:** Echavarria Baruch, Cynthia H CIV USN NAVFAC SW SAN CA (USA) <cynthia.h.echavarriabaruch.civ@us.navy.mil>
**Sent:** Tuesday, February 1, 2022 8:39 AM
**To:** Kristie Baley <kbaley@lemoore.com>
**Cc:** Echavarria Baruch, Cynthia H CIV USN NAVFAC SW SAN CA (USA) <cynthia.h.echavarriabaruch.civ@us.navy.mil>
**Subject:** Public Notice

Ms. Baley, the attached NOA was received by the installation. For future notices please address th letters to Community Plans & Liaison Officer or CPLO. This will help route correspondence to the correct office.
My mailing address is:

Community Plans & Liaison Officer
700 Avenger Ave, Room 111
Lemoore, CA 93246

1

Respectfully,

Cynthia Echavarria Baruch
Community Planning Liaison Officer
NAVFAC SW Lemoore
Lemoore NAS CA 93246
Phone: 559-998-4093
Email: cynthia.baruch@navy.mil

Letter 1, page 1

**Response to Comment Letter 1**:

**Comment 1 Summary:** Change of address for future correspondence.

**Response to Comment 1:** The content of this letter has been noted for the record and it is acknowledged that the City has updated its mailing contact information for NAVFAC SW Lemoore.

<u>Comment Letter 2</u>
Mark Ghann – Amoah
District Deputy
CA Dept. of Conservation
Geologic Energy Management Division
801 K Street, MS 18-05
Sacramento, CA 95814
**February 8, 2022**

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California
**Department of Conservation**
Geologic Energy Management Division

Gavin Newsom, Governor
David Shabazian, Director
801 K Street, MS 18-05
Sacramento, CA 95814
T: (916) 445-9686

02/08/2022

**Comment Letter 2**

Judy Holwell
711 W. Cinnamon Drive , Lemoore, CA 93245, USA

Construction Site Well Review (CSWR) ID: 1012421

Assessor Parcel Number(s): 021030057000

Property Owner(s): Assemi Group, Inc.

Project Location Address: W. Lacey Blvd & 18th Avenue Lemoore Lemoore, California 93245

Project Title: Lacey Ranch Area Master Plan Project

Public Resources Code (PRC) § 3208.1 establishes well reabandonment responsibility when a previously plugged and abandoned well will be impacted by planned property development or construction activities. Local permitting agencies, property owners, and/or developers should be aware of, and fully understand, that significant and potentially dangerous issues may be associated with development near oil, gas, and geothermal wells. 1

The California Geologic Energy Management Division (CalGEM) has received and reviewed the above referenced project dated 2/8/2022. To assist local permitting agencies, property owners, and developers in making wise land use decisions regarding potential development near oil, gas, or geothermal wells, the Division provides the following well evaluation. 2

The project is located in Kings County, within the boundaries of the following fields:

Any Field

Our records indicate there are 1 known oil or gas wells located within the project boundary as identified in the application. 3

- Number of wells Not Abandoned to Current Division Requirements as Prescribed by Law and Projected to Be Built Over or Have Future Access Impeded by this project: 0

Page 1

## Letter 2, page 2

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- Number of wells Not Abandoned to Current Division Requirements as Prescribed by Law and Not Projected to Be Built Over or Have Future Access Impeded by this project: 1
- Number of wells Abandoned to Current Division Requirements as Prescribed by Law and Projected to Be Built Over or Have Future Access Impeded by this project: 0 3
- Number of wells Abandoned to Current Division Requirements as Prescribed by Law and Not Projected to Be Built Over or Have Future Access Impeded by this project: 0

The Division categorically advises against building over, or in any way impeding access to, oil, gas, or geothermal wells. Impeding access to a well could result in the need to remove any structure or obstacle that prevents or impedes access including, but not limited to, buildings, housing, fencing, landscaping, trees, pools, patios, sidewalks, roadways, and decking. Maintaining sufficient access is 4
considered the ability for a well servicing unit and associated necessary equipment to reach a well from a public street or access way, solely over the parcel on which the well is located. A well servicing unit, and any necessary equipment, should be able to pass unimpeded along and over the route, and should be able to access the well without disturbing the integrity of surrounding infrastructure.

There are no guarantees a well abandoned in compliance with current Division requirements as prescribed by law will not start leaking in the future. It always remains a possibility that any well may start to leak oil, gas, and/or water after abandonment, no matter how thoroughly the well was plugged 5
and abandoned. The Division acknowledges wells plugged and abandoned to the most current Division requirements as prescribed by law have a lower probability of leaking in the future, however there is no guarantees that such abandonments will not leak.

The Division advises that all wells identified on the development parcel prior to, or during, development activities be tested for liquid and gas leakage. Surveyed locations should be provided to the Division in 6
Latitude and Longitude, NAD 83 decimal format. The Division expects any wells found leaking to be reported to it immediately.

Failure to plug and reabandon the well may result in enforcement action, including an order to perform 7
reabandonment well work, pursuant to PRC § 3208.1, and 3224.

PRC § 3208.1 give the Division the authority to order or permit the re-abandonment of any well where it has reason to question the integrity of the previous abandonment, or if the well is not accessible or visible. Responsibility for re-abandonment costs may be affected by the choices made by the local 8
permitting agency, property owner, and/or developer in considering the general advice set forth in this letter. The PRC continues to define the person or entity responsible for reabandonment as:

# Letter 2, page 3

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1. The property owner - If the well was plugged and abandoned in conformance with Division requirements at the time of abandonment, and in its current condition does not pose an immediate danger to life, health, and property, but requires additional work solely because the owner of the property on which the well is located proposes construction on the property that would prevent or impede access to the well for purposes of remedying a currently perceived future problem, then the owner of the property on which the well is located shall obtain all rights necessary to reabandon the well and be responsible for the reabandonment. 8a

2. The person or entity causing construction over or near the well - If the well was plugged and abandoned in conformance with Division requirements at the time of plugging and abandonment, and the property owner, developer, or local agency permitting the construction failed either to obtain an opinion from the supervisor or district deputy as to whether the previously abandoned well is required to be reabandoned, or to follow the advice of the supervisor or district deputy not to undertake the construction, then the person or entity causing the construction over or near the well shall obtain all rights necessary to reabandon the well and be responsible for the reabandonment. 8b

3. The party or parties responsible for disturbing the integrity of the abandonment - If the well was plugged and abandoned in conformance with Division requirements at the time of plugging and abandonment, and after that time someone other than the operator or an affiliate of the operator disturbed the integrity of the abandonment in the course of developing the property, then the party or parties responsible for disturbing the integrity of the abandonment shall be responsible for the reabandonment. 8c

No well work may be performed on any oil, gas, or geothermal well without written approval from the Division. Well work requiring approval includes, but is not limited to, mitigating leaking gas or other fluids from abandoned wells, modifications to well casings, and/or any other re-abandonment work. The Division also regulates the top of a plugged and abandoned well's minimum and maximum depth below final grade. CCR §1723.5 states well casings shall be cut off at least 5 feet but no more than 10 feet below grade. If any well needs to be lowered or raised (i.e. casing cut down or casing riser added) to meet this regulation, a permit from the Division is required before work can start. 9

The Division makes the following additional recommendations to the local permitting agency, property owner, and developer:

1. To ensure that present and future property owners are aware of (a) the existence of all wells located on the property, and (b) potentially significant issues associated with any improvements near oil or gas wells, the Division recommends that information regarding the above identified well(s), and any other pertinent information obtained after the issuance of this letter, be communicated to the appropriate county recorder for inclusion in the title information of the subject 10a

Page 3

## Letter 2, page 4

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real property.

2. The Division recommends that any soil containing hydrocarbons be disposed of in accordance with local, state, and federal laws. Please notify the appropriate authorities if soil containing significant amounts of hydrocarbons is discovered during development. 10b

As indicated in PRC § 3106, the Division has statutory authority over the drilling, operation, maintenance, and abandonment of oil, gas, and geothermal wells, and attendant facilities, to prevent, as far as possible, damage to life, health, property, and natural resources; damage to underground oil, gas, and geothermal deposits; and damage to underground and surface waters suitable for irrigation or domestic purposes. In addition to the Division's authority to order work on wells pursuant to PRC §§ 3208.1 and 3224, it has authority to issue civil and criminal penalties under PRC §§ 3236, 3236.5, and 3359 for violations within the Division's jurisdictional authority. The Division does not regulate grading, excavations, or other land use issues. 11

If during development activities, any wells are encountered that were not part of this review, the property owner is expected to immediately notify the Division's construction site well review engineer in the Inland district office, and file for Division review an amended site plan with well casing diagrams. The District office will send a follow-up well evaluation letter to the property owner and local permitting agency. 12

Should you have any questions, please contact me at (661) 440-8942 or via email at marvelous.egboro@conservation.ca.gov. 13

Sincerely,

Jeff Kimber

Jeff Kimber for

Mark Ghann-Amoah
District Deputy

cc: Judy Holwell - Submitter

**Responses to Comment Letter 2**:

**Comment 1 Summary:** This comment establishes that Public Resources Code Section 3208.1 (pertaining to previously plugged/abandoned wells) is applicable to the Project.

**Response to Comment 1:** The contents of this letter have been noted for the record and it is acknowledged that the City of Lemoore and Project Applicant are aware of Public Resources Code Section 3208.1. According to information obtained from the California Department of Conservation- Geologic Energy Management Division ("CalGEM" or "Division") Well Finder Database, a plugged and abandoned oil/gas well is located on the subject property. According to records available from the CalGEM Well Finder Database, the well, identified as Kreyenhagen 23-35, was drilled to a depth of 9,090 feet bgs on April 1, 1964 and was subsequently abandoned in on May 16, 1964. Review of the CalGEM records indicates that no oil or gas was encountered during the development of the well.

To address potential impacts associated with the well, the following mitigation measures were recommended in the Draft EIR and will be a condition of Project approval. Please note that MM HAZ – 1 has been updated based on the Response to Comment #10a.

**HAZ – 1** Prior to the issuance of grading or building permits, the Project proponent or contractor shall:

i. Provide a site plan that clearly delineates the locations of all known oil wells and the 10-foot no-build radius around each well. A copy of the map shall be submitted to the California Department of Conservation, Geologic Energy Management Division (CalGEM), and the City of Lemoore Community Development Department.

ii. Record the information regarding the presence and location of the abandoned well in the County Recorder's title information of the Project site.

**HAZ – 2** In the event that other abandoned or unrecorded wells are uncovered or damaged during excavation or grading activities, all work shall cease in the vicinity of the well, and the California Department of Conservation, Geologic Energy Management Division (CalGEM), shall be contacted for requirements and approval; copies of said approvals shall be submitted to the City of Lemoore Community Development Department CalGEM, may determine that remedial plugging operations may be required.

MM HAZ-2 includes coordination with CalGEM to determine any remedial actions, including testing for liquid and gas leakage. After implementation of MM HAZ-1 and MM HAZ-2, the impact is reduced to a less than significant level. Thus, the proposed Project would comply with these recommendations. This comment does not otherwise raise a substantive issue on the content of the Draft EIR

**Comment 2 Summary:** This comment is introductory in nature and establishes that the California Geologic Energy Management Division (CalGEM) has reviewed the Project and is providing an evaluation of wells on the Project site.

**Response to Comment 2:** The comment is introductory in nature and noted for the record. No further response is required.

**Comment 3 Summary:** This comment identifies the number of known oil or gas wells located within the Project boundaries. Based on CalGEM's review, there is one well that is "Not abandoned to current Division requirements as prescribed by law and not projected to be built over or have future access impeded by this project".

**Response to Comment 3:** The comment has been noted for the record and it is acknowledged that the City and the Project Applicant are aware of the one abandoned well on site. Please refer to Response #1. The proposed project would comply with these recommendations. This comment does not otherwise raise a substantive issue on the content of the Draft EIR.

**Comment 4 Summary:** The Division advises against building over or impeding access to oil, gas or geothermal wells.

**Response to Comment 4:** The comment is noted for the record. As noted in Draft EIR Chapter 3.8 *Hazards and Hazardous Materials*, the presence of the well on the subject property is noted. As such, it represents a potential for environmental concerns if 1) drill cuttings (muds) were stored on the subject property and 2) emission of methane and hydrogen sulfide gases are likely to impact the subject property. During oil well drilling of this type, it was common practice to deposit the drill cuttings in a large excavation near the location of the well, commonly referred to as drilling mud pits. The drill cuttings could potentially contain elevated levels of crude oil, petroleum hydrocarbons, and metals. An additional issue of concern with oil/gas wells is the potential

emission of methane and hydrogen sulfide gases. These gases can migrate through geologic materials and/or through pathways such as old oil wells, fissures, and fractures in underlying geologic formations. The emitted gases have the potential to accumulate within building interiors or basements and adversely affect human health.

However, due to the fact that the well did not produce oil or gas, potential emissions of methane and hydrogen sulfide gases are not expected to represent a significant environmental concern at this time. However, the likely presence of drilling mud pits in connection with the wells is considered a Recognized Environmental Concern (REC), as they represent conditions indicative of a release to the environment. It should be noted that the owner/operator of the well would likely be responsible for any future well abandonment activities, including any subsurface investigations and/or remediation related to potential contamination associated with drilling mud pits on the subject property. CalGEM may require the re-abandonment of the wells to current abandonment guidelines should future development on the subject property "prevent or impede access to the well for purposes of remedying a currently perceived future problem".

As indicated in Response #1, review of the CalGEM records indicates that for the abandoned on-site well that no oil or gas was encountered during the development of the well. However, implementation of Mitigation Measure HAZ – 2 will reduce impacts in the event that a well is uncovered or damaged during construction. This comment does not otherwise raise a substantive issue on the content of the Draft EIR.

**Comment 5 Summary:** Abandoned wells may start leaking in the future.

**Response to Comment 5:** See Response #1, above.

After implementation of MM HAZ-1 and MM HAZ-2, the impact is reduced to a less than significant level. Thus, the proposed Project would comply with these recommendations. This comment does not otherwise raise a substantive issue on the content of the Draft EIR

**Comment 6 Summary:** The Division advises that all wells identified on the Project site be tested for liquid and gas leakage.

**Response to Comment 6:** See Responses #1-#5. After implementation of MM HAZ-1 and MM HAZ-2, the impacts related to is reduced to a less than significant level. Thus, the proposed

Project would comply with these recommendations. This comment does not otherwise raise a substantive issue on the content of the Draft EIR.

**Comment 7 Summary**: Failure to plug and abandon a well may result in enforcement action, including an order to perform reabandonment well work.

**Response to Comment 7:** As indicated in Response #1-#5 after implementation of MM HAZ-1 and MM HAZ-2, impacts are reduced to a less than significant level. Thus, the proposed Project would comply with these recommendations. This comment does not otherwise raise a substantive issue on the content of the Draft EIR.

**Comment 8, 8a, 8b, 8c Summary**: The Division has authority to order or permit the re-abandonment of any well. Comments 8, 8a, 8b, and 8c define the responsibility for the implementation of abandonment procedures as well as consultation with the Division.

**Response to Comment 8, 8a, 8b, and 8c:** The Lead Agency acknowledges CalGEM as having authority of wells. As indicated in Response #1-#5, after implementation of MM HAZ-1 and MM HAZ-2, impacts are reduced to a less than significant level. Thus, the proposed Project would comply with these recommendations. This comment does not otherwise raise a substantive issue on the content of the Draft EIR.

**Comment 9 Summary**: No well work may be performed on any oil, gas or geothermal well without written approval from CalGEM.

**Response to Comment 9:** The comment is noted for the record. As indicated in Response #1-#5 after implementation of MM HAZ-1 and MM HAZ-2, impacts are reduced to a less than significant level. Thus, the proposed Project would comply with these recommendations. This comment does not otherwise raise a substantive issue on the content of the Draft EIR.

**Comment 10a Summary:** The Division recommends that present and future property owners are aware of existing/known wells located on the Project site.

**Response to Comment 10a:** The comment is noted for the record. The Lead Agency concurs with the comment pertaining to Mitigation Measure MM HAZ-1 and has revised the text. The

revisions to MM HAZ-1, as outlined below, fall within the scope of the original Project analysis included in the Draft EIR and do not result in an increase to any identified impacts or produce any new impacts. No new significant environmental impact would result from the changes or from a new mitigation measure proposed to be implemented. Therefore, no significant revisions have been made which would require recirculation of the Draft EIR pursuant to CEQA Guidelines Section 15088.5 (Recirculation of an EIR Prior to Certification).

**HAZ – 1** Prior to the issuance of grading or building permits, the Project proponent or contractor shall:

i. Provide a site plan that clearly delineates the locations of all known oil wells and the 10-foot no-build radius around each well. A copy of the map shall be submitted to the California Department of Conservation, Geologic Energy Management Division (CalGEM), and the City of Lemoore Community Development Department.

ii. Record the information regarding the presence and location of the abandoned well in the County Recorder's title information of the Project site.

**Comment 10b Summary:** The Division recommends that any soil containing hydrocarbons be disposed of in accordance with local, State and federal laws.

**Response to Comment 10b:** The comment is noted for the record. The presence of the well on the subject property represents a potential for environmental concerns if 1) drill cuttings (muds) were stored on the subject property and 2) emission of methane and hydrogen sulfide gases are likely to impact the subject property. During oil well drilling of this type, it was common practice to deposit the drill cuttings in a large excavation near the location of the well, commonly referred to as drilling mud pits. The drill cuttings could potentially contain elevated levels of crude oil, petroleum hydrocarbons, and metals. An additional issue of concern with oil/gas wells is the potential emission of methane and hydrogen sulfide gases. These gases can migrate through geologic materials and/or through pathways such as old oil wells, fissures, and fractures in underlying geologic formations. The emitted gases have the potential to accumulate within building interiors or basements and adversely affect human health.

However, due to the fact that the well did not produce oil or gas, potential emissions of methane and hydrogen sulfide gases are not expected to represent a significant environmental concern at this time. However, the likely presence of drilling mud pits in connection with the wells is

considered a REC, as they represent conditions indicative of a release to the environment. It should be noted that the owner/operator of the well would likely be responsible for any future well abandonment activities, including any subsurface investigations and/or remediation related to potential contamination associated with drilling mud pits on the subject property. CalGEM may require the re-abandonment of the wells to current abandonment guidelines should future development on the subject property "prevent or impede access to the well for purposes of remedying a currently perceived future problem".

As indicated in Response #1, review of the CalGEM records indicates that for the abandoned on-site well that no oil or gas was encountered during the development of the well. However, implementation of MM HAZ – 2 will reduce impacts in the event that a well is uncovered or damaged during construction. This comment does not otherwise raise a substantive issue on the content of the Draft EIR and no revisions are necessary.

**Comment 11 Summary:** This comment outlines the Division's statutory authority over drilling, operation, maintenance, and abandonment of oil, gas, and geothermal wells.

**Response to Comment 11:** The comment is noted for the record. See Responses #1-#10.

**Comment 12 Summary:** Encountering unknown/undiscovered wells on the Project site.

**Response to Comment 11:** The Comment is noted for the record. See Responses #1-10

**Comment 13 Summary:** Closing comments.

**Response to Comment 11:** The comment noted for the record. The City of Lemoore appreciates the Division's comments and input on the Project.

Comment Letter 3
Cherie Clark
Air Quality Specialist II
San Joaquin Air Pollution Control District
1990 East Gettysburg Ave.
Fresno, CA 93726
**February 22, 2022**

Comment Letter 3

**From:** Kristie Baley
**To:** Travis Crawford; Steve Brandt (steve.brandt@qkinc.com); Jaymie Brauer
**Subject:** FW: DEIR Lacey Ranch Area Master Plan Project
**Date:** Wednesday, February 23, 2022 8:44:12 AM
**Importance:** High

Good Morning,

Please see both emails from Cherie below, requesting documents and or information. Please send me the information or include me in your response to Cherie so that I have it for our records.

Thank You,

*Kristie Baley*
*Management Analyst*
*711 W Cinnamon Drive*
*Lemoore, CA 93245*
*559.924.6744 ext. 740*

**From:** Cherie Clark <Cherie.Clark@valleyair.org>
**Sent:** Tuesday, February 22, 2022 5:25 PM
**To:** Kristie Baley <kbaley@lemoore.com>
**Subject:** RE: DEIR Lacey Ranch Area Master Plan Project
**Importance:** High

Hello again Kristie,

Also, if there was a Health Risk Analysis or screening done, could you please send the electronic files so that our team can review? By electronic I mean the excel/data spreadsheet, not the PDF. 1

Thank you,

*Cherie Clark*
*Air Quality Specialist II*
*San Joaquin Valley APCD*
*1990 East Gettysburg Avenue*
*Fresno, CA 93726*
*559-230-5940*
*Service*Teamwork*Attitude*Respect*

**From:** Cherie Clark
**Sent:** Tuesday, February 22, 2022 5:15 PM
**To:** 'kbaley@lemoore.com' <kbaley@lemoore.com>
**Subject:** DEIR Lacey Ranch Area Master Plan Project
**Importance:** High

Hi Kristie,

Letter 3, page 2

Can you please send me the air quality study Appendix C? All the appendices in the document are just title pages. The DEIR references an air quality/greenhouse fas study but it is not included. As info, it references it as appendix B, however, the title page and the index refer to it as Appendix C. 2

Thank you,

*Cherie Clark*
*Air Quality Specialist II*
*San Joaquin Valley APCD*
*1990 East Gettysburg Avenue*
*Fresno, CA 93726*
*559-230-5940*
*Service*Teamwork*Attitude*Respect*

<u>**Comment 1 Summary:** Request for information related to a Health Risk Assessment or screening.</u>

**Response to Comment 1:** The requested information was provided to the Air District via email on February 24, 2022. No further comments were received regarding the Heath Risk Analysis.

<u>**Comment 2 Summary:** Request for Air Quality/Greenhouse Gas/Energy Study appendix.</u>

**Response to Comment 2:** The comment is noted for the record. The requested information was provided to the Air District via email on February 23, 2022. No further comments were received regarding the Air Quality and Greenhouse Gases Analysis.

<u>Comment Letter 4</u>
Monique Wilber
Conservation Program Support Supervisor
CA Dept. Of Conservation
Division of Land Resource Protection
715 P Street, MS 1904
Sacramento, CA 95814
**February 25, 2022**

California
Department of Conservation
Division of Land Resource Protection

Gavin Newsom, Governor
David Shabazian, Director

Comment Letter 4

FEBRUARY 25, 2022

VIA EMAIL: KBALEY@LEMOORE.COM
Kristie Baley
Community Development Department
City of Lemoore
205 West 4th Street W. Cinnamon Drive
Lemoore, CA 93245

Dear Ms. Baley:

DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE LACEY RANCH AREA MASTER PLAN PROJECT, SCH#2020080314

The Department of Conservation's (Department) Division of Land Resource Protection (Division) has reviewed the Draft Environmental Impact Report (DEIR) for the Lacey Ranch Area Master Plan Project (Project). The Division monitors farmland conversion on a statewide basis, provides technical assistance regarding the Williamson Act, and administers various agricultural land conservation programs. We offer the following comments and recommendations with respect to the project's potential impacts on agricultural land and resources. 1

<u>Project Description</u>

Within the Lacey Ranch Area Master Plan, the Project applicant is proposing to subdivide and develop approximately 156 acres of land into a planned residential community with a mix of single-family and multi-family housing units. The exact number of each housing type may vary slightly, depending on final density, however, there will be a maximum of 825 housing units in total. Approximately 75% of the site will be developed with single family housing units on a variety of lot sizes, with the remainder to be developed with multi-family housing and parks/trails. 2

The Project applicant proposes to annex the site into the City Limits of Lemoore and will require a General Plan Amendment and Zone Change to change the land use designations from agriculture to residential. The Project will also require a modification to the City's Sphere of Influence (SOI). The proposed project site is mapped as containing approximately 154 acres of Prime Farmland and one acre of Unique Farmland as designated by the Department of Conservation's Farmland Mapping and Monitoring Program. The proposed site is also under a Williamson Act contract. 3

## Letter 4, page 2

Department Comments

The conversion of agricultural land represents a permanent reduction and significant impact to California's agricultural land resources. CEQA requires that all feasible and reasonable mitigation be reviewed and applied to projects. Under CEQA, a lead agency should not approve a project if there are feasible alternatives or feasible mitigation measures available that would lessen the significant effects of the project. 4

All mitigation measures that are potentially feasible should be included in the project's environmental review. A measure brought to the attention of the lead agency should not be left out unless it is infeasible based on its elements.

Consistent with CEQA Guidelines, the Department recommends the County consider agricultural conservation easements, among other measures, as potential mitigation. (See Cal. Code Regs., tit. 14, § 15370 [mitigation includes "compensating for the impac by replacing or providing substitute resources or environments, including through permanent protection of such resources in the form of conservation easements."])

Mitigation through agricultural easements can take at least two forms: the outright purchase of easements or the donation of mitigation fees to a local, regional, or statewide organization or agency whose purpose includes the acquisition and stewardship of agricultural easements. The conversion of agricultural land should be deemed an impact of at least regional significance. Hence, the search for replacement lands should not be limited strictly to lands within the project's surroundinc area. 5

Of course, the use of conservation easements is only one form of mitigation that should be considered. Any other feasible mitigation measures should also be considered. The Department suggests the lead agency revisit its consideration of agricultural easements, and/or the donation of mitigation in lieu-of fees to areas outside of its area of concern. 6

As stated in the DEIR, "Approximately one-third of the site (the southerly one-third) is within the City's SOI while the remaining northern two-thirds are currently outside the SOI and outside the City's Planning Boundary. As the northern two thirds of the proposed Project site was not included in the Planning Area of the 2030 Lemoore General Plan, this same area of the site was not included in the agricultural conversion analysis of the 2030 Lemoore General Plan EIR."[1] 7

[1] Draft Environmental Impact Report, Lacey Ranch Area Master Plan Project, State Clearinghouse #2020080314, Chapter Three, Environmental Evaluation, 3.1 Agriculture and Forestry Resources, P.3.1-11, https://files.ceqanet.opr.ca.gov/264017-4/attachment/qYlvIyywIdh0RDoWzUibyW5eGi1RYRHLtUVs-IB8E_d1r3izdhtqMYVYFYLugnlqMdsqJMjjzkhwY27n0

# Letter 4, page 3

It appears that the lead agency intends to tier off of the 2030 Lemoore General Plan EIR; although, not officially stated as outlined in the California Code of Regulations, Title 14, Section 15152(g). 7 Contd.

If it is the intent of the lead agency to tier off of the 2030 Lemoore General Plan EIR; then the Lacey Ranch Area Master Plan DEIR should discuss, evaluate, and consider potential mitigation measures for those portions of land not evaluated and discussed in the 2030 Lemoore General Plan EIR.

<u>Conclusion</u>

The Department recommends further discussion and evaluation of the following issues: 8

- Proposed mitigation measures for all impacted agricultural lands within the proposed project area. Specifically, those lands not evaluated in the City of Lemoore 2030 General Plan EIR.
- The Projects compatibility with, and/or, potential contract resolutions for lands within agricultural preserves and/or enrolled in a Williamson Act contract.

Thank you for giving us the opportunity to comment on the Draft Environmental Impact Report for the Draft Environmental Impact Report for the Lacey Ranch Area Master Plan Project. Please provide this Department with notices of any future hearing dates as well as any staff reports pertaining to this project. If you have any questions regarding our comments, please contact Farl Grundy, Associate Environmental Planner via email at Farl.Grundy@conservation.ca.gov. 9

Sincerely,

*Monique Wilber*

Monique Wilber

Conservation Program Support Supervisor

Page 3 of 3

**Responses to Comments Letter 4:**

**Comment 1 Summary**: Introductory comment.

**Response to Introductory Comment:** Comment noted for the record. The comment is introductory in nature and no response is required.

**Comment 2 Summary**: Summary of Project Description.

**Response to Comment 2:** The comment is noted for the record. This comment is a summary of the Project Description. No response is required.

**Comment 3 Summary**: Summary of Project Description.

**Response to Comment 3:** The comment is noted for the record. This comment is a summary of the Project Description. No response is required.

**Comment 4 Summary**: Consideration and application of feasible mitigation measures.

**Response to Comment 4:** The comment is noted for the record.

The Lead Agency has considered mitigation through agricultural easements for the proposed Project. However, in a recent Court of Appeals decision, *King & Gardiner Farms v. County of Kern* (2020) 45 Cal. App. 5th 814, the Court found that a mitigation measure that requires a conservation easement over off-site farmland would not provide adequate mitigation for the loss of farmland that would result from the project. In the Court's findings, it was determined that conservation easements do not compensate for the impact of converting farmland to non-farmland use because the mitigation would not create new farmland that would offset the loss of converted farmland.

Under CEQA, mitigation measures are deemed effective if they will substantially lessen or minimize an environmental impact. In this case, since an agricultural conservation easement or payment of in-lieu fees wouldn't reduce the impacts associated with loss of farmland on the proposed Project site, an agricultural conservation easement or payment of in-lieu fees would not be considered "effective" mitigation.

In addition, neither the City nor the County of Kings have a farmland mitigation or agricultural conservation easement program in which the proposed Project can participate. Absent such a

City-wide or regional program, the City cannot impose mitigation in the form of agricultural easements or payment of in-lieu fees on a case-by-case basis. Thus, the City's finding is that the loss of farmland associated with the proposed Project will be a significant and unavoidable impact under CEQA and a Statement of Overriding Considerations will be prepared for consideration by the City as Lead Agency.

In addition, in Draft EIR Chapter 3.10 *Hydrology*, it was noted General Plan Policy PU-I-10 states the following: "Require that developers of agricultural land to be annexed to the City offer the water rights associated with this land to the City." The Lead Agency imposed Mitigation Measure HYD-1 that requires evidence that that 100 water shares be offered to the City to comply with Policy PU-I-10. This mitigation would also help mitigate for the loss of agricultural lands within the City by a City farmland related program.

All feasible mitigation measures have been included in the Project's Draft EIR, and will also be enforced as conditions of approval through the provisions of CEQA. This comment does not otherwise raise a substantive issue on the content of the EIR and no revisions are necessary.

**Comment 5 Summary**: Potential mitigation through agricultural easements.

**Response to Comment 5:** The comment is noted for the record. See Response #4, above. This comment does not otherwise raise a substantive issue on the content of the EIR and no revisions are necessary.

**Comment 6 Summary**: Other potential mitigation for loss of farmland.

**Response to Comment 6:** The comment is noted for the record. The City, as Lead Agency, has reviewed feasible alternatives and mitigation measures, including those brought to the attention of the City. All feasible mitigation measures have been included in the Draft EIR and will also be enforced as conditions of approval through the provisions of CEQA. Please see also Response #4 for the discussion regarding mitigation in the form of an agricultural conservation easement. This comment does not otherwise raise a substantive issue on the content of the EIR and no revisions are necessary.

**Comment 7 Summary**: Tiering from the City of Lemoore General Plan EIR.

**Response to Comment 7:** The comment is noted for the record. Although the southern portion of the proposed Project is within the City's existing Sphere of Influence, the Project's Draft EIR did not "tier" from the City's General Plan EIR. The Agricultural Conversion Study (Appendix B of the Draft EIR) and the Draft EIR considered and evaluated the entire Project site. The City's finding is that the loss of farmland associated with the proposed Project will be a significant and unavoidable impact under CEQA and a Statement of Overriding Considerations will be prepared for consideration by the City as Lead Agency. See Also Response #4. This comment does not otherwise raise a substantive issue on the content of the EIR and no revisions are necessary.

**Comment 8 Summary**: Recommendation for further evaluation of mitigation measures for all impacted agricultural lands and evaluation of the Project's compatibility with agricultural preserves/Williamson Act contracts.

**Response to Comment 8:** The comment is noted for the record. See Responses #4 and #7, above.

As described in the Draft EIR, the Project site is subject to a Williamson Act Land Use contract, pursuant to Government Code Section 51200 et seq. The entire Project site is currently under a Williamson Act contract; however, a protest was filed with the Local Agency Formation Commission (LAFCo) on December 1, 1982, in accordance with Section 51243.5 (a) of the Government Code, as amended, which will result in a dissolution of the Williamson Act Contract upon annexation of the subject site to the City. With the dissolution of the Williamson Act Contract, there would be no conflict with a Williamson Act Contract. This comment does not otherwise raise a substantive issue on the content of the EIR and no revisions are necessary.

**Comment 9 Summary**: Closing comments and request for future noticing.

**Response to Comment 9:** The comment is noted for the record. The City will notify the DOC of any public hearings associated with the Project. As indicated in the Notice of Availability, the City's Planning Commission will hold a public hearing on the Final EIR on April 11, 2022, on or after 7:00 PM at the Lemoore City Council Chambers, 429 C Street, Lemoore, CA 93245. The City of Lemoore appreciates the DOC's comments and input on the Project.

<u>Comment Letter 5</u>
Mark Montelongo
Program Manager
San Joaquin Air Pollution Control District
1990 East Gettysburg Ave.
Fresno, CA 93726
**March 9, 2022**

Comment Letter 5

San Joaquin Valley AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

March 9, 2022

Kristie Baley
City of Lemoore
Community Development Department
711 W. Cinnamon Drive
Lemoore, CA 93245

**Project: Draft Environmental Impact Report for the Lacey Ranch Area Master Plan Project**

**District CEQA Reference No: 20220078**

Dear Ms. Baley:

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the Draft Environmental Impact Report (DEIR) for the project referenced above from the City of Lemoore (City). The project consists of the subdivision of approximately 156 acres to develop a planned residential community of up to 825 single family and multi-family residential dwelling units, a total of four parks and 1.64 acres of trail area, to be developed over a 16-year period (Project). The Project is located at W. Lacey Boulevard and 18th Avenue in Lemoore CA (APN 021-030-057). The District offers the following comments: 1

**1) <u>Reducing Air Quality Impacts from Construction Activities</u>**

The DEIR determined that Project related construction emissions would have a less than significant impact. Although the construction-related emissions are expected to have a less than significant impact, to further reduce impacts from construction-related diesel exhaust emissions, the District recommends the Project utilize clean off-road construction equipment, including the latest tier equipment as feasible and include best practices such as eliminating unnecessary idling. 2

**2) <u>Vegetative Barriers and Urban Greening</u>**

The District suggests the City consider the feasibility of incorporating vegetative barriers and urban greening as a measure to further reduce air pollution exposure on sensitive receptors. 3

Samir Sheikh
Executive Director/Air Pollution Control Officer

| Northern Region | Central Region (Main Office) | Southern Region |
|---|---|---|
| 4800 Enterprise Way | 1990 E. Gettysburg Avenue | 34946 Flyover Court |
| Modesto, CA 95356-8718 | Fresno, CA 93726-0244 | Bakersfield, CA 93308-9725 |
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While various emission control techniques and programs exist to reduce air quality emissions from mobile and stationary sources, vegetative barriers have been shown to be an additional measure to potentially reduce a population's exposure to air pollution through the interception of airborne particles and the update of gaseous pollutants. Examples of vegetative barriers include, but not limited to the following: trees, bushes, shrubs, or a mix of these. Generally, a higher and thicker vegetative barrier with full coverage will result in greater reductions in downwind pollutant concentrations. In the same manner, urban greening is also a way to help improve air quality and public health in addition to enhancing the overall beautification of a community with drought resistant low maintenance greenery. 3 Contd.

**3) On-site Solar Deployment**

It is the policy of the State of California that renewable energy resources and zero-carbon resources supply 100% of retail sales of electricity to California end-use customers by December 31, 2045. While various emission control techniques and programs exist to reduce air quality emissions from mobile and stationary sources, the production of solar energy is contributing to improving air quality and public health. The District suggests that the City consider the feasibility of incorporating solar power systems, as an emission reduction strategy for this Project. 4

**4) District Rules and Regulation**

The District issues permits for many types of air pollution sources and regulates some activities not requiring permits. A project subject to District rules and regulation would reduce its impacts on air quality through compliance with regulatory requirements. In general, a regulation is a collection of rules, each of which deals with a specific topic. Here are a couple of example, Regulation II (Permits) deals with permitting emission sources and includes rules such as District permit requirements (Rule 2010), New and Modified Stationary Source Review (Rule 2201), and implementation of Emission Reduction Credit Banking (Rule 2301). 5

The list of rules below is neither exhaustive nor exclusive. Current District rules can be found online at: www.valleyair.org/rules/1ruleslist.htm. To identify other District rules or regulations that apply to this Project or to obtain information about District permit requirements, the applicant is strongly encouraged to contact the District's Small Business Assistance (SBA) Office at (559) 230-5888.

**4a) District Regulation VIII (Fugitive PM10 Prohibitions)**

The project proponent may be required to submit a Construction Notification Form or submit and receive approval of a Dust Control Plan prior to commencing any earthmoving activities as described in Regulation VIII, specifically Rule 8021 – *Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities*. 6

Letter 5, page 3



The application for both the Construction Notification and Dust Control Plan can be found online at:
https://www.valleyair.org/busind/comply/PM10/forms/DCP-Form.docx

Information about District Regulation VIII can be found online at:
http://www.valleyair.org/busind/comply/pm10/compliance_pm10.htm

6 Contd.

**4a) District Rule 9510 (Indirect Source Review)**

The purpose of District Rule 9510 (Indirect Source Review) is to reduce the growth in both NOx and PM10 emissions associated with development and transportation projects from mobile and area sources associated with construction and operation of development projects. The rule encourages clean air design elements to be incorporated into the development project. In case the proposed project clean air design elements are insufficient to meet the targeted emission reductions, the rule requires developers to pay a fee used to fund projects to achieve off-site emissions reductions.

The proposed Project is subject to District Rule 9510 because it will receive a project-level discretionary approval from a public agency and will equal or exceed 50 residential dwelling units. When subject to the rule, an Air Impact Assessment (AIA) application is required prior to applying for project-level approval from a public agency. In this case, if not already done, please inform the project proponent to immediately submit an AIA application to the District to comply with District Rule 9510. 7

An AIA application is required and the District recommends that demonstration of compliance with District Rule 9510, before issuance of the first building permit, be made a condition of Project approval.

Information about how to comply with District Rule 9510 can be found online at:
http://www.valleyair.org/ISR/ISRHome.htm.

The AIA application form can be found online at:
http://www.valleyair.org/ISR/ISRFormsAndApplications.htm.

**4b) Other District Rules and Regulations**

The Project may also be subject to the following District rules: Rule 4102 (Nuisance), Rule 4601 (Architectural Coatings), and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations). In the event an existing building will be renovated, partially demolished or removed, the project may be subject to District Rule 4002 (National Emission Standards for Hazardous Air Pollutants). 8

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*San Joaquin Valley Air Pollution Control District* *Page 4*
*District Reference No. 20220078*
*March 9, 2022*

**5) District Comment Letter**

The District recommends that a copy of the District's comments be provided to the Project proponent. 9

If you have any questions or require further information, please contact Cherie Clark by e-mail at Cherie.Clark@valleyair.org or by phone at (559) 230-5940.

Sincerely,

Brian Clements
Director of Permit Services

For Mark Montelongo
Program Manager

**Responses to Comments Letter 5:**

**Comment 1 Summary**: Introductory comment.

**Response to Introductory Comment:** The comment is noted for the record. The comment is introductory in nature and no response is required.

**Comment 2 Summary**: Reducing air quality impacts from construction activities.

**Response to Comment 2:** The comment is noted for the record. The commenter acknowledges that the Project will result in less than significant impacts related to construction-related emissions. The commenter suggests that the Project utilize clean off-road construction equipment. It is unknown at this time the makeup (i.e. tier) of the construction contractor's construction equipment. However, the Project developer will encourage the use of the latest tier equipment as feasible, including best practices such as eliminating unnecessary idling. As noted in the Draft EIR Chapter 3.2 *Air Quality*, the City's General Plan includes policies that will help further reduce Project impacts such as COS 1-42 to reduce fugitive dust and vehicle emissions during construction. In addition, the Project would be required to comply with all applicable San Joaquin Valley Air Pollution Control District (District) rules and regulations.

Furthermore, various federal and State regulations including the Low Carbon Fuel Standard, Pavley Clean Car Standards, and Low Emission Vehicle Program would serve to reduce the transportation fuel demand by the Project, including during construction. This comment does not otherwise raise a substantive issue on the content of the EIR and no revisions are necessary.

**Comment 3 Summary**: Addition of vegetative barriers and urban greening.

**Response to Comment 3:** The comment is noted for the record. The commenter encourages the installation of vegetative barriers and urban greening as a measure to reduce air pollution exposure, including the use of trees, bushes, shrubs, or a mix of these. As noted in Draft EIR, the Project includes three parks for a total of 7.46 acres and 1.64 acres of trail area. These areas will be landscaped/maintained and will include the installation of vegetation, including trees, bushes and shrubs. This comment does not otherwise raise a substantive issue on the content of the EIR and no revisions are necessary.

<u>**Comment 4 Summary**: The installation of on-site solar technology.</u>

**Response to Comment 3:** The comment is noted for the record. The Project is required to install solar panels on each residential structure within the Project, pursuant to Title 24 standards. Use of renewable energy will off-set demand for electricity generated by coal-powered electrical generation facilities, thus reducing criteria pollutants and GHG emissions to help improve air quality in the San Joaquin Valley air basin. This comment does not otherwise raise a substantive issue on the content of the EIR and no revisions are necessary.

<u>**Comment 5 Summary**: The Project should comply with District rules and regulations.</u>

**Response to Comment 5:** The comment is noted for the record. The commenter outlines the various Air District rules and regulations applicable to the Project. See also Responses #2- #4. The Project will comply with all pertinent rules and regulations of the Air District. This comment does not otherwise raise a substantive issue on the content of the EIR and no revisions are necessary.

<u>**Comment 6 Summary**: The Project should comply District Regulation VIII (Fugitive PM10 Prohibitions).</u>

**Response to Comment 6:** The comment is noted for the record. The commenter outlines the District Rule 8121, as applicable to the Project. See also Responses #2-#5. The Project will comply with all pertinent rules and regulations of the District, including Rule 8021. This comment does not otherwise raise a substantive issue on the content of the EIR and no revisions are necessary.

<u>**Comment 7 Summary**: The Project should comply with District Rule 9510 (Indirect Source Review)</u>

**Response to Comment 7:**

The comment is noted for the record. The commenter outlines the District Rule 9510, as applicable to the Project. See also Responses #2- #6.

Reductions in NOX emissions help reduce the secondary formation of PM10 in the atmosphere (primarily ammonium nitrate and ammonium sulfate) and also reduce the formation of ozone.

Reductions in directly emitted PM10 reduce particles such as dust, soot, and aerosols. Rule 9510 is also a control measure in the 2016 Plan for the 2008 8-Hour Ozone Standard. Developers of projects subject to Rule 9510 must reduce emissions occurring during construction and operational phases through on-site measures or pay off-site mitigation fees. The Project will comply with all pertinent rules and regulations of the District, including Rule 9510. This comment does not otherwise raise a substantive issue on the content of the EIR and no revisions are necessary.

**Comment 8 Summary**: Project compliance with other District Rules and Regulations.

**Response to Comment 8:** The comment is noted for the record. The commenter outlined additional District rules and regulations that may be required for the Project. See Responses #2-#7. This comment does not otherwise raise a substantive issue on the content of the EIR and no revisions are necessary

**Comment 9 Summary**: Closing comments.

**Response to Comment 9:** Comment noted. A copy of the comment letter was provided to the Project Applicant. The City of Lemoore appreciates the Air District's comments and input on the Project.

<u>Comment Letter 6</u>
Julie Vance
Regional Manager
CA Dept. of Fish & Wildlife – Central Division
1234 E. Shaw Ave.
Fresno, CA 93710
**March 11, 2022**

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State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Central Region
1234 East Shaw Avenue
Fresno, California 93710
(559) 243-4005
www.wildlife.ca.gov

*GAVIN NEWSOM, Governor*
*CHARLTON H. BONHAM, Director*

Comment Letter 6

March 11, 2022

Kristie Baley
City of Lemoore
711 W Cinnamon Drive
Lemoore, California 93245

**Subject: Lacey Ranch Area Master Plan**
**Draft Environmental Impact Report (DEIR)**
**State Clearinghouse No. 2020080314**

Dear Ms. Baley:

The California Department of Fish and Wildlife (CDFW) received a Draft Environmental Impact Report from the City of Lemoore for the above-referenced Project pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.[1]

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, CDFW appreciates the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under Fish and Game Code. 1

**CDFW ROLE**

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statute for all the people of the State (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (*Id.*, § 1802). Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources. CDFW is also submitting comments as a **Responsible Agency** under CEQA (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may 2

[1] CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

*Conserving California's Wildlife Since 1870*

Letter 6, page 2



Kristie Baley
City of Lemoore
March 11, 2022
Page 2

need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority (Fish & G. Code, § 1600 et seq.). Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), related authorization as provided by the Fish and Game Code will be required. 2 Contd.

**Nesting Birds:** CDFW has jurisdiction over actions with potential to result in the disturbance or destruction of active nest sites or the unauthorized take of birds. Fish and Game Code sections that protect birds, their eggs and nests include, sections 3503 (regarding unlawful take, possession or needless destruction of the nest or eggs of any bird), 3503.5 (regarding the take, possession or destruction of any birds-of-prey or their nests or eggs), and 3513 (regarding unlawful take of any migratory nongame bird). 3

**COMMENTS AND RECOMMENDATIONS**

**Swainson's Hawk (SWHA)**

CDFW has reviewed the provided document and appreciates the Project proponent for adopting the majority of the mitigation measures recommended in our letter dated September 22, 2020. In regard to SWHA, CDFW cannot concur that the 500-foot no-disturbance buffer for active SWHA nests listed Mitigation Measure: BIO-2 is sufficient to reduce potential signficant impacts to active SWHA nests and/or avoid unauthorized take of SWHA, which is listed as threatened pursuant to CESA. CDFW's *Staff Report regarding Mitigation for Impacts to Swainson's Hawks (Buteo swainsoni) in the Central Valley of California* states:

"No intensive new disturbances (e.g. heavy equipment operation associated with construction, use of cranes or draglines, new rock crushing activities) or other project related activities which may cause nest abandonment or forced fledging, should be initiated within 1/4 mile (buffer zone) of an active nest between March 1 - September 15 or until August 15 if a Management Authorization or Biological Opinion is obtained for the project. The buffer zone should be increased to ½ mile in nesting areas away from urban development (i.e. in areas where disturbance [e.g. heavy equipment operation associated with construction, use of cranes or draglines, new rock crushing activities] is not a normal occurrence during the nesting season)." 4

Therefore, CDFW the no-disturbance buffer be extended from 500 feet to ¼ or ½ mile, as appropriate, to reduce potential significant impacts and prevent unauthorized take of the SWHA.

CDFW appreciates the opportunity to comment on the Project to assist City of Lemoore in identifying and mitigating the Project's impacts on biological resources. More information on survey and monitoring protocols for sensitive species can be found at 5

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Kristie Baley
City of Lemoore
March 11, 2022
Page 3

CDFW's website (https://www.wildlife.ca.gov/Conservation/Survey-Protocols). If you have any questions, please contact Jaime Marquez, Environmental Scientist, at the address provided on this letterhead, by telephone at (559) 580-3200, or by electronic mail at Jaime.Marquez@wildlife.ca.gov. 5 Contd.

Sincerely,

DocuSigned by:
Julie Vance
EA83E09FE08945A...
Julie A. Vance
Regional Manager

**Responses to Comments Letter 6:**

<u>**Comment 1 Summary**: Introductory comment.</u>

**Response to Introductory Comment:** The comment is noted for the record. The comment is introductory in nature and no response is required.

<u>**Comment 2 Summary**: CDFW's role.</u>

**Response to Comment 2:** The comment is noted for the record. The commenter provides background information about CDFW's role as California's Trustee Agency for fish and wildlife resources and as a Responsible Agency under CEQA. The comment has been noted for the record, and the City, as Lead Agency, acknowledges CDFW's authority.

<u>**Comment 3 Summary**: Impacts to nesting birds.</u>

**Response to Comment 3:** The comment is noted for the record. The commenter outlines CDFW's jurisdiction over actions with potential to result in the disturbance or destruction of active migratory bird nest sites or the unauthorized take of migratory birds. The City acknowledges CDFW's authority over nesting birds.

<u>**Comment 4 Summary**: Project impacts to Swainson's Hawk (SWHA)</u>

**Response to Comment 4:** The commenter requests that if SWHA are found during pre-construction surveys that the no-disturbance buffer zone (during construction activities) be extended from 500 feet to ¼ or ½ mile, as appropriate to reduce potential significant impacts and prevent unauthorized take of SWHA.

Although as noted in the Draft EIR Chapter 3.3 *Biological Resources*, no SWHA were observed during the surveys that were conducted for the Project, additional pre-construction surveys will be conducted to assess whether SWHA nests are present within a 10-mile radius around the Project site to identify the nearest nest (if any), as required by Mitigation Measure BIO-1. If no SWHA nests are observed, no further action is necessary and impacts would be less than significant.

Additionally, Mitigation Measure BIO-2 requires if a SWHA nest is identified during pre-construction surveys that construction activities will not occur within 500 feet of an active nest. At that time, the appropriate buffer zone will be identified by a qualified biologist.

For purposes of clarity, Mitigation Measure BIO-2 will be revised to reflect a more flexible buffer zone, which will ultimately be decided through consultation with CDFW if active SWHA nests are identified during pre-construction surveys. Mitigation Measure BIO-2 is revised as follows (new text is shown in underline and ~~strikeout~~):

**BIO- 2:** If an active Swainson's hawk nest is discovered at any time within 0.5 mile of active construction, a qualified biologist shall complete an assessment of the potential for current construction activities to impact the nest. The assessment shall consider the type of construction activities, the location of construction relative to the nest, the visibility of construction activities from the nest location, and other existing disturbances in the area that are not related to construction activities of this Project. Based on this assessment, the biologist shall determine if construction activities can proceed, and the level of nest monitoring required. Construction activities shall not occur within a distance of between 500 feet to 0.5 mile of an active nest as determined by a qualified biologist.~~, but~~ depending upon conditions at the site~~., this distance may be reduced~~. Full-time monitoring to evaluate the effects of construction activities on nesting Swainson's hawks may be required. The qualified biologist shall have the authority to stop work if it is determined that Project construction is disturbing the nest. These buffers may need to increase depending on the sensitivity of the nesting Swainson's hawk to disturbances and at the discretion of the qualified biologist. No avoidance would be needed if construction occurs near a known Swainson's hawk nest outside of the Swainson's hawk nesting season.

With implementation of the revised MM BIO-2, impacts to SWHA would be less than significant. This comment does not otherwise raise a substantive issue on the content of the EIR and no additional revisions are necessary

**Comment 5 Summary**: Closing comments.

**Response to Comment 5:** Comment noted. The City of Lemoore appreciates CDFW's comments and input on the Project.

# CHAPTER THREE – Errata / Text Changes to the DEIR

Revisions and clarifications to the Draft EIR ("Errata") made in response to comments and information received on the Draft EIR are indicated by strikeout text (e.g. ~~strikeout~~), indicating deletions, and underline text (e.g. underline), indicating additions. In addition to revisions and clarifications made as a result of comments received on the Draft EIR, other minor changes to the Project Description were made based on revisions to the Project's Tentative Map. These revisions were made based on an updated Tentative Map that was reviewed by the City pertaining to park locations/acreage and associated changes to the lot layout configuration. The original Project Description and map identified four park areas and trails, while the updated map identifies three park areas and trails. The park acreage was reduced from 7.9 acres to 7.46 acres. The number of proposed residential units remains the same (up to 825 units). The updated site plan that reflects these changes is also included in the errata section herein.

The revisions, as outlined below, fall within the scope of the original project analysis included in the Draft EIR and do not result in an increase to any identified impacts or produce any new impacts. No new significant environmental impact would result from the changes or from a new mitigation measure proposed to be implemented. Therefore, no significant revisions have been made which would require recirculation of the Draft EIR pursuant to CEQA Guidelines Section 15088.5 (Recirculation of an EIR Prior to Certification).

The following are the revisions and clarifications made to the Draft EIR:

**Draft EIR Page 2-6**

*Parks and Open Space*

The Project includes a total of ~~four~~ three parks for a total of ~~7.9~~ 7.46 acres and 1.64 acres of trail area, as depicted in Figure 4a – Site Plan (Northern Area) and Figure 4b – Site Plan (Southern Area). The 1.64 acres of trail area will be designated and zoned consistent with the designations and zoning of their adjacent parcels.

**Draft EIR Page 2-8**

*Note: The previous "Figure 4 – Site Plan" has been replaced with updated layouts that are now shown in two figures: Figure 4a – Site Plan (Northern Area) and Figure 4b – Site Plan (Southern Area).*

~~**Figure 4 - Site Plan**~~

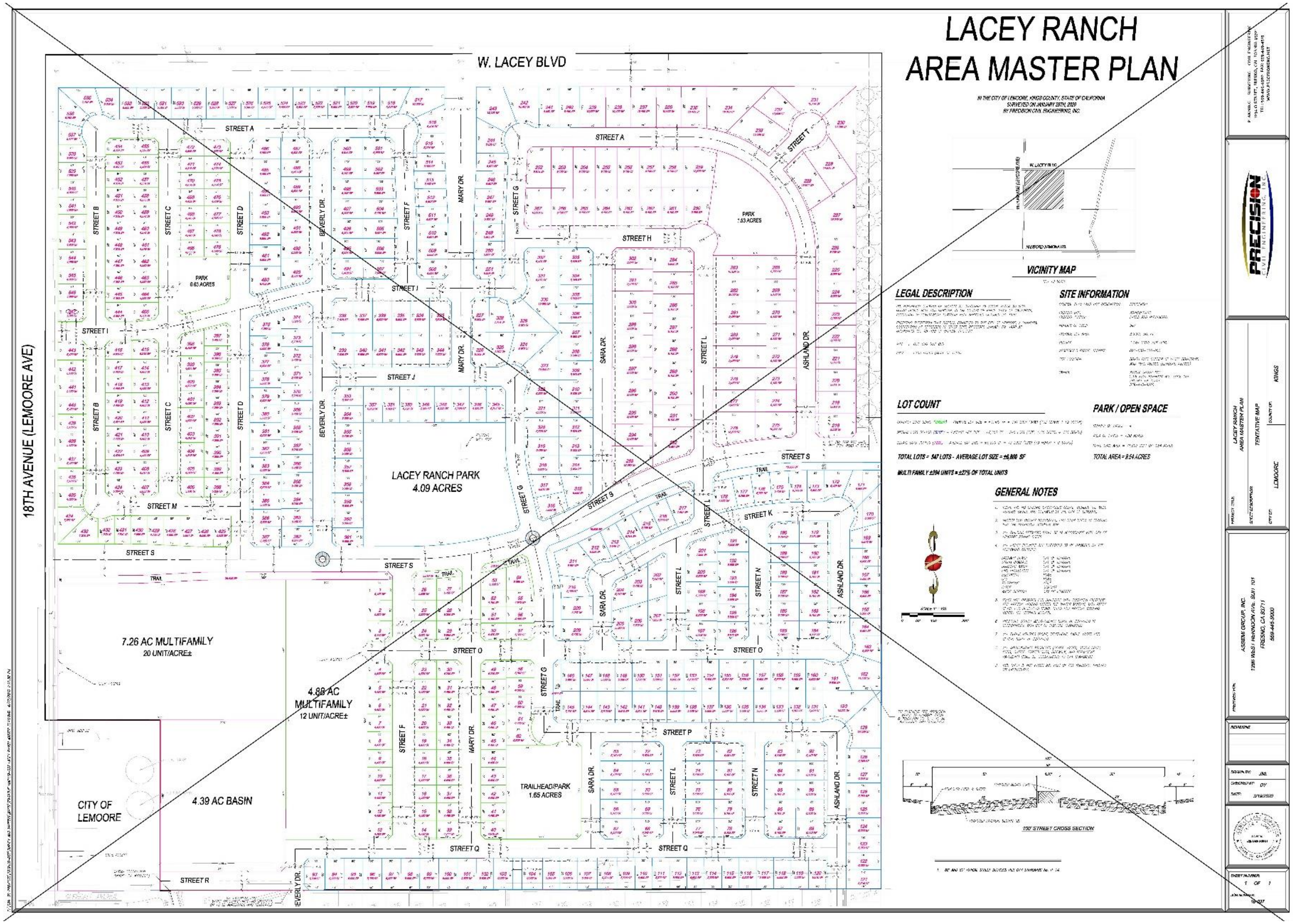


**Figure 4a - Site Plan (Northern Area)**

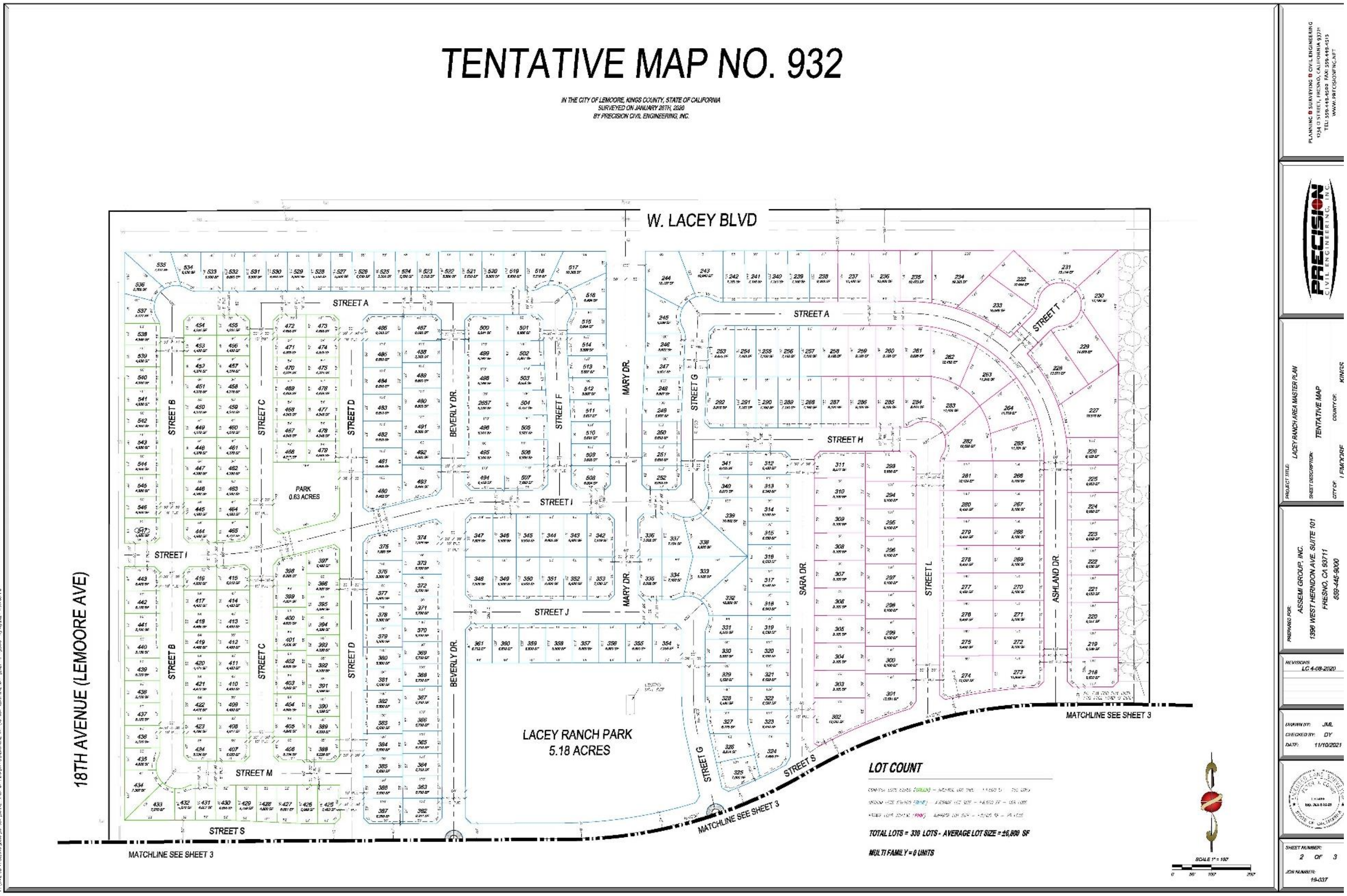
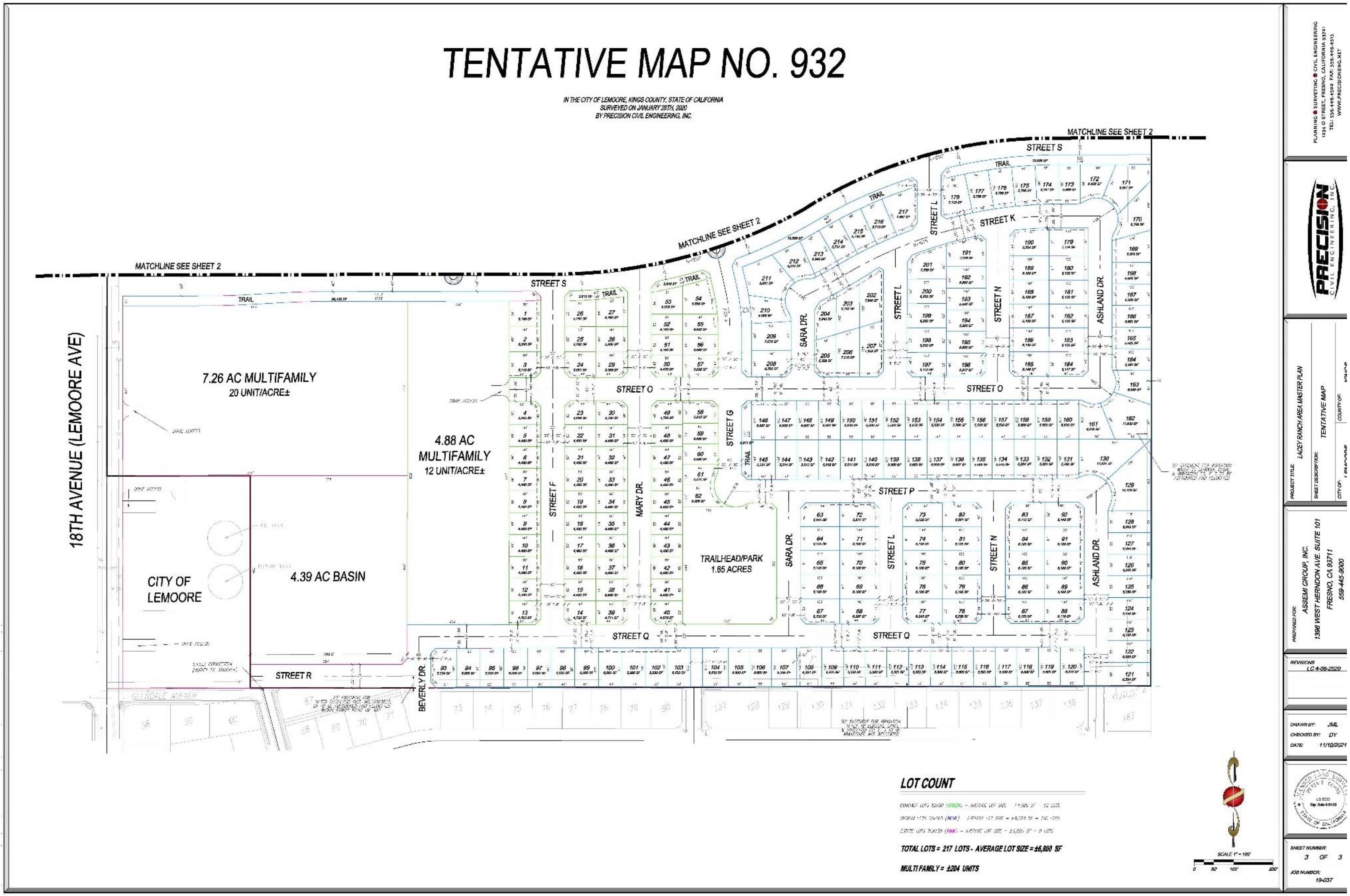


**Figure 4b - Site Plan (Southern Area)**



**Draft EIR Page 3.3-19**

**Mitigation Measures:**

**BIO- 2:** If an active Swainson's hawk nest is discovered at any time within 0.5 mile of active construction, a qualified biologist shall complete an assessment of the potential for current construction activities to impact the nest. The assessment shall consider the type of construction activities, the location of construction relative to the nest, the visibility of construction activities from the nest location, and other existing disturbances in the area that are not related to construction activities of this Project. Based on this assessment, the biologist shall determine if construction activities can proceed, and the level of nest monitoring required. Construction activities shall not occur within a distance of between 500 feet to 0.5 miles of an active nest as determined by a qualified biologist, ~~but~~ depending upon conditions at the site~~., this distance may be reduced~~. Full-time monitoring to evaluate the effects of construction activities on nesting Swainson's hawks may be required. The qualified biologist shall have the authority to stop work if it is determined that Project construction is disturbing the nest. These buffers may need to increase depending on the sensitivity of the nesting Swainson's hawk to disturbances and at the discretion of the qualified biologist. No avoidance would be needed if construction occurs near a known Swainson's hawk nest outside of the Swainson's hawk nesting season.

**HAZ – 1** Prior to the issuance of grading or building permits, the Project proponent or contractor shall:

i. Provide a site plan that clearly delineates the locations of all known oil wells and the 10-foot no-build radius around each well. A copy of the map shall be submitted to the California Department of Conservation, Geologic Energy Management Division (CalGEM), and the City of Lemoore Community Development Department.

ii. Record the information regarding the presence and location of the abandoned well in the County Recorder's title information of the Project site.

**Draft EIR Page 3.13-12**

*Parks*

The proposed Project will increase the City's population by up to approximately 2,558 people at full buildout. The City standard for parkland dedication, established in the City Subdivision Ordinance, is five (5) acres of parkland per thousand residents. Using this ratio, the Project would require at least 12.79 acres of parkland and/or payment of impact fees for City-owned and operated parks and recreation areas that serve all residents (2,558/1,000 = 2.558 X 5 = 12.79).

The proposed Project includes the construction of three parks for a total of ~~7.9~~ 7.46 acres and 1.64 acres of trails for a total of ~~9.54~~ 9.1 acres as identified in Figure 2-4 of Chapter Two – *Project Description*. Based on the City's requirement of five acres per thousand residents, the Project not meet the City's requirement for parkland acreage by ~~3.25~~ 3.69 acres. Therefore, the Project developer will also be required to pay in lieu fees, in compliance with the goals, policies, and implementation measures of the General Plan and Lemoore City Municipal Code Title 9, Chapter 7, Article N. Implementation of Mitigation Measure PUB-4 would reduce impacts on parks and recreational services to a less-than-significant level. The Project's construction phases will have no impacts.

**Draft EIR Page 3.13-13**

**PUB-4:** Prior to issuance of building permits, the Project proponent shall pay parkland impact fees or in-lieu equivalent to maintain the City's established requirement of five acres of parkland per thousand residents. The impact fees or in-lieu equivalent will apply to the ~~3.25~~ 3.69 acres of parkland not being constructed by the Project, as set forth in the City's General Plan and Lemoore City Municipal Code Title 9, Chapter 7, Article N. The Project's parkland impact fees will be determined by the City of Lemoore. Evidence of the payment of impact fees shall be submitted to the City Community Development Department.

# CHAPTER FOUR – Mitigation Monitoring and Reporting Program

State law requires that a public agency adopt a monitoring program for mitigation measures that have been incorporated into the approved project to reduce or avoid significant effects on the environment. The purpose of the monitoring program is to ensure compliance with environmental mitigation during project implementation and operation. Since there are potentially significant impacts requiring mitigation associated with the project, a Mitigation Monitoring Program is included herein on the following pages.

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
|---|---|---|---|---|
| **Biological Resources** | | | | |
| **BIO – 1**:<br><br>1. To the extent practicable, construction shall be scheduled to avoid the Swainson's hawk nesting season, season (February 15 to August 31).<br>2. If it is not possible to schedule construction between September and February, prior to commencement of ground disturbance activities, a qualified biologist shall conduct surveys for Swainson's hawk in accordance with the Swainson's Hawk Technical Advisory Committee's *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (SWTAC 2000, Appendix C). Surveys shall be conducted within a 10-mile radius around the Project site to identify the nearest nest, which will determine the habitat mitigation ratio. If no Swainson's hawk nests are observed, no further action is necessary. CDFW shall be consulted if an active nest is found within 0.5 miles of the Project site. A copy of the survey report shall be submitted to the City of Lemoore Community Development Department. | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore and CDFW | |
| **BIO – 2:**<br>If an active Swainson's hawk nest is discovered at any time within 0.5 mile of active construction, a qualified biologist shall complete an assessment of the potential for current construction activities to impact the nest. The assessment shall consider the type of construction activities, the location of construction relative to the nest, the visibility of construction activities from the nest location, and other existing disturbances in the area that are not related to construction activities of this Project. Based on this assessment, the biologist shall determine if construction activities can proceed, and the level of nest monitoring required. Construction activities shall not occur within a distance of | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore and CDFW | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
|---|---|---|---|---|
| between 500 feet to 0.5 miles of an active nest as determined by a qualified biologist, depending upon conditions of the site. Full-time monitoring to evaluate the effects of construction activities on nesting Swainson's hawks may be required. The qualified biologist shall have the authority to stop work if it is determined that Project construction is disturbing the nest. These buffers may need to increase depending on the sensitivity of the nesting Swainson's hawk to disturbances and at the discretion of the qualified biologist. No avoidance would be needed if construction occurs near a known Swainson's hawk nest outside of the Swainson's hawk nesting season. | | | | |
| **BIO -3:**<br>Prior to the issuance of grading or building permits, the Project proponent shall consult with the California Department of Fish and Wildlife (CDFW) regarding compensation for the loss of 156 acres of Swainson's hawk foraging habitat. Potential compensation may include a compensatory ratio of 0.5:1 up to 1:1 ratio, depending on the location of active Swainson's hawk nests. Evidence of consultation with CDFW and payment of compensation shall be submitted to the City of Lemoore Community Development Department.). | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore and CDFW | |
| **BIO – 4**:<br>1. To the extent practicable, construction shall be scheduled to avoid the Swainson's hawk nesting season, season (February 15 to August 31).<br>2. If it is not possible to schedule construction between September 15 and February 15, a pre-construction clearance survey for nesting birds shall be conducted by a qualified no more than 14 days prior to the start of construction activities. During this survey, the qualified biologist shall | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore and CDFW | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
|---|---|---|---|---|
| inspect all potential nest substrates in and immediately adjacent to the impact areas, including within 250 feet in the case of raptor nests and within 100 feet for nests of all other birds. If an active nest is found close enough to the construction area to be disturbed by these activities, the qualified biologist shall determine the extent of a construction-free buffer to be established around the nest. If work cannot proceed without disturbing the nesting birds, work shall be halted or redirected to other areas until nesting and fledging are completed or the nest has failed for non-construction related reasons. | | | | |
| **BIO – 5:**<br>Within 14 days prior to the start of Project ground-disturbing activities, a pre-activity survey with a 500-foot buffer where land access is permitted shall be conducted by a qualified biologist knowledgeable in the identification of burrowing owl, American badger, San Joaquin kit fox (SJKF) and other special status species that are known to be in the area, and approved by the CDFW. Surveys need not be conducted for all areas at one time; they may be phased so that surveys occur within 14 days of the portion of the Project site that will be disturbed. If dens/burrows that could support any of these species are discovered during the pre-activity surveys, the avoidance buffers outlined below shall be established. No work would occur within these buffers unless the biologist approves and monitors the activity. If no listed or special status species is observed during the preconstruction clearance survey, no further action in necessary.<br><br>**Burrowing Owl (active burrows)**<br>• Non-breeding season: September 1 – January 31 – 160 feet<br>• Breeding season: February 1 – August 31 – 250 feet | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore and CDFW | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
|---|---|---|---|---|
| **American Badger/SJKF**<br>• Potential or Atypical den – 50 feet<br>• Known den – 100 feet<br>• Natal or pupping den – 500 feet, unless otherwise specified by CDFW.<br><br>If burrowing owl are found within these recommended buffers and avoidance is not possible, burrow exclusion shall be conducted by qualified biologists and only during the non-breeding season, before breeding behavior is exhibited and after the burrow is confirmed empty through non-invasive methods, such as surveillance. Replacement of occupied burrows with artificial burrows shall occur at a ratio of one burrow collapsed to one artificial burrow constructed (1:1) to mitigate for evicting burrowing and the loss of burrows. Burrowing owl may attempt to colonize or re-colonize an area that will be impacted; thus, ongoing surveillance shall occur at excluded burrows at a rate that is sufficient to detect burrowing owl if they return.<br><br>If, during construction activities, a live burrowing owl, American badger, or SJKF is encountered, all construction activity should stop in the affected area until the animal leaves of its own volition. The special-status species should be avoided by construction activities and construction workers and allowed to leave the Project Site without harassment | | | | |
| **BIO – 6:**<br>Prior to the initiation of construction activities, all construction personnel should attend a Worker Environmental Awareness Training program | Project Applicant | Prior to issuance of grading or | City of Lemoore and CDFW | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
|---|---|---|---|---|
| developed by a qualified biologist. Any personnel associated with construction that did not attend the initial training shall be trained by the authorized biologist prior to working on the project site. Any employee responsible for the operations and maintenance or decommissioning of the project facilities shall also attend the Worker Environmental Awareness Training program prior to starting work on the project and on an annual basis.<br>The Program shall be developed and presented by the project qualified biologist(s) or designee approved by the qualified biologist(s). The program shall include information on the life histories of special-status species with potential to occur on the Project, their legal status, course of action should these species be encountered on-site, and avoidance and minimization measures to protect these species. It shall include the components described below:<br><br>a. Information on the life history and identification of special-status species that may occur or that may be affected by Project activities. The program shall also discuss the legal protection status of each such species, the definition of "take" under the Federal Endangered Species Act and California Endangered Species Act, measures the Project proponent/operator shall implement to protect the species, reporting requirements, specific measures for workers to avoid take of special-status plant and wildlife species, and penalties for violation of the requirements outlined in the California Environmental Quality Act mitigation measures and agency permit requirements.<br>b. An acknowledgement form signed by each worker indicating that the Worker Environmental Awareness Training and Education program has been completed shall be kept on file at the construction site.<br>c. A copy of the training transcript and/or training video, as well as a list of the names of all personnel who attended the Worker | | building permits | | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
|---|---|---|---|---|
| Environmental Awareness Training and Education program, and signed acknowledgement forms shall be submitted to the City of Lemoore Community Development Department.<br>d. A sticker shall be placed on hard hats indicating that the worker has completed the Worker Environmental Awareness Training and Education program. Construction workers shall not be permitted to operate equipment within the construction areas unless they have attended the Worker Environmental Awareness Training and Education Program and are wearing hard hats with the required sticker.<br>e. The construction crews and contractor(s) shall be responsible for preventing unauthorized impacts from project activities to sensitive biological resources that are outside the areas defined as subject to impacts by Project permits. Unauthorized impacts may result in project stoppage, and/or fines depending on the impact and coordination with the California Department of Fish and Wildlife and/or U.S. Fish and Wildlife Service. | | | | |
| **BIO – 7:**<br>Prior to issuance of any grading or building permit, the Project proponent/developer shall submit a final Delineation report to the City of Lemoore. A copy of this report shall also be provided to the Regional Water Quality Control Board (RWQCB), California Department of Fish & Wildlife (CDFW) and U.S. Army Corps of Engineers (USACE) (as applicable). The report shall include information as shown below as a plan if necessary and shall outline compliance to the following:<br>1. Delineation of all jurisdictional features at the project site. Potential jurisdictional features within the project boundary identified in the jurisdictional delineation report may be shown in plan form. | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore and CDFW | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
|---|---|---|---|---|
| 2. If the Project has a potential to directly or indirectly impact jurisdictional aquatic resources, a formal aquatic resource delineation of these areas shall be performed by a qualified professional to determine the extent of agency jurisdiction and permits/authorizations from the appropriate regulating agencies (RWQCB, CDFW, and USACE) shall be obtained prior to disturbance to jurisdictional features.<br><br>If it is determined that drainage is jurisdictional and cannot be avoided, the Project proponent shall obtain a Section 401 Waters Quality Certification from the RWQCB, a Section 404 permit from USACE and a Lake and Streambed Alteration Agreement from the CDFW, if required prior to impacting any waters.<br><br>As part of these authorizations, compensatory mitigation may be required by the regulating agencies to offset the loss of aquatic resources. If so, and as part of the permit application process, a qualified professional shall draft a Mitigation and Monitoring Plan to address implementation and monitoring requirements under the permit to ensure that the Project would result in no net loss of habitat functions and values. The Plan shall contain, at a minimum, mitigation goals and objectives, mitigation location, a discussion of actions to be implemented to mitigate the impact, monitoring methods and performance criteria, extent of monitoring to be conducted, actions to be taken in the event that the mitigation is not successful, and reporting requirements. The Plan shall be approved by the appropriate regulating agencies and compensatory mitigation shall take place either on site or at an appropriate off-site location.<br><br>3. Any material/spoils generated from project activities containing hazardous materials shall be located away from jurisdictional areas or | | | | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
|---|---|---|---|---|
| special-status habitat and protected from storm water run-off using temporary perimeter sediment barriers such as berms, silt fences, fiber rolls, covers, sand/gravel bags, and straw bale barriers, as appropriate. Protection measures should follow project-specific criteria as developed in a Stormwater Pollution Prevention and Protection Plan (SWPPP).<br><br>4. Equipment containing hazardous liquid materials shall be stored on impervious surfaces or plastic ground covers to prevent any spills or leakage from contaminating the ground and at least 50 feet outside the delineated boundary of jurisdictional water features.<br>Any spillage of material shall be stopped if it can be done safely. The contaminated area shall be cleaned, and any contaminated materials properly disposed. For all spills, the project foreman or designated environmental representative shall be notified. | | | | |
| **Cultural Resources** | | | | |
| **CUL-1:**<br>Prior to any ground disturbance, a surface inspection of the site shall be conducted by a Tribal Monitor. The Tribal Cultural Staff shall monitor the site during grading activities. The Tribal Staff shall provide pre-project-related activities briefings to supervisory personnel and any excavation contractor, which will include information on potential cultural material finds, and any excavation contractor, which will include information on potential cultural material finds, and on the procedures, to be enacted if resources are found. Prior to any ground disturbance, the applicant shall offer the Santa Rosa Rancheria Tachi Yokut Tribe the opportunity to provide a Native American Monitor during ground-disturbing activities. Tribal participation would be dependent upon the availability and interest of the tribe. | Project Applicant | Prior to issuance of grading or building permits / ongoing | City of Lemoore | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
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| | | | | |
| **CUL-2:** In the event that historical or archaeological cultural resources are discovered during project-related activities or decommissioning, operations shall stop within 100 feet of the find, and a qualified archeologist shall determine whether the resource requires further study. The qualifies archaeologist shall determine the measures that shall be implemented to protect the discovered resources including, but not limited to, excavation of the finds and evaluation of he finds and evaluation of the finds in accordance with § 15064.5 of the CEQA Guidelines. Measures may include avoidance, preservation in-place, recordation, additional archaeological resting, and data recovery, among other options. Any previously undiscovered resources found during project-related activities within the project area shall be recorded on appropriate Department of Parks and Recreation forms and evaluated for significance. No further ground disturbance shall occur in the immediate vicinity of the discovery until approved by the qualified archaeologist.<br>The Lead Agency, along with other relevant or tribal officials, shall be contacted upon the discovery of cultural resources to begin coordination on the disposition of the find(s). Treatment of any significant cultural resources shall be undertaken with the approval of the Lead Agency. | Project Applicant | During construction | City of Lemoore | |
| **CUL-3:** Upon coordination with the Lead Agency, any archaeological artifacts recovered shall be donated to an appropriate tribal custodian or a qualified scientific institution where they would be afforded applicable cultural resources laws and guidelines. | Project Applicant | During Construction | City of Lemoore | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
|---|---|---|---|---|
| | | | | |
| **CUL-4:** If human remains are discovered during project-related activities or operational activities, further excavation or disturbance shall be prohibited pursuant to Section 7050.5 of the California Health and Safety Code. The specific protocol, guidelines, and channels of communication outlined by the Native American Heritage Commission, in accordance with Section 7050.5 of the Health and Safety Code, Section 5097.98 of the Public Resources Code (Chapter 1492, Statutes of 1982, Senate Bill 297), and Senate Bill 447 (Chapter 44, Statutes of 1987) shall be followed. Section 7050.5(c) shall guide the potential Native American involvement, in the event of discovery of human remains, at the direction of the County Coroner. | Project Applicant | During Construction | City of Lemoore | |
| **Geology and Soils** | | | | |
| **GEO-1:** Prior to the issuance of building or grading permits for the project, the project proponent shall conduct a full geotechnical study to evaluate soil conditions and geologic hazards on the project site and submit it to the City of Lemoore Building Division for review and approval. The project proponent shall retain a California registered and licensed geotechnical engineer to design the project facilities to withstand probable seismically induced ground shaking at the site. All grading and construction on site shall adhere to the specifications, procedures, and site conditions contained in the final design plans, which shall be fully compliant with the seismic recommendations of the California registered professional engineer. | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
|---|---|---|---|---|
| a. The geotechnical study must be signed by a California registered and licensed professional geotechnical engineer or engineering geologist and must include the following:<br>I. Location of fault traces and potential for surface rupture and ground shaking potential.<br>II. Maximum considered earthquake and associated ground acceleration for design.<br>III. Potential for seismically induced liquefaction, landslides, differential settlement, and unstable soils.<br>IV. Stability of any existing or proposed cut-and-fill slopes.<br>V. Identification of collapsible or expansive soils.<br>VI. Foundation material type.<br>VII. Potential for wind erosion, water erosion, sedimentation, and flooding.<br>VIII. Location and description of unprotected drainage that could be impacted by the proposed development.<br>IX. Recommendations for placement and design of facilities, foundations, and remediation of unstable ground. | | | | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
|---|---|---|---|---|
| b. The project proponent shall determine the final siting of project facilities based on the results of the geotechnical study and implement recommended measures to minimize geologic hazards.<br><br>c. The City of Lemoore Building Division shall evaluate any final facility siting design developed prior to the issuance of any building or grading permits to verify that geological constraints have been avoided or mitigated.<br><br>d. The final structural design shall be subject to approval and follow-up inspection by the City of Lemoore Building Division. Final design requirements shall be provided to the on-site construction supervisor and the City of Lemoore Building Inspector to ensure compliance. A copy of the approved design shall be submitted to the City of Lemoore Community Development Department. | | | | |
| **GEO – 2:**<br>Prior to issuing of grading or building permits, the project applicant shall submit to the City: (1) the approved Stormwater Pollution Prevention Plan (SWPPP) and (2) the Notice of Intent (NOI) to comply with the General National Pollutant Discharge Elimination System (NPDES) from the Central Valley Regional Water Quality Control Board. The requirements of the SWPPP and NPDES shall be incorporated into design specifications and construction contracts. Recommended Best Management Practices for the construction phase may include the following:<br>• Stockpiling and disposing of debris, concrete, and soil properly; | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
|---|---|---|---|---|
| • Protecting existing storm drain inlets and stabilizing disturbed areas;<br>• Implementing erosion controls;<br>• Properly managing construction materials;<br>• Managing waste, aggressively controlling litter, and implementing sediment controls; and<br>• Evidence of the approved SWPPP shall be submitted to the Lead Agency. | | | | |
| **GEO – 3:**<br>If any paleontological resources are encountered during ground-disturbance activities, all work within 25 feet of the find shall halt until a qualified paleontologist as defined by the Society of Vertebrate Paleontology Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (2010), can evaluate the find and make recommendations regarding treatment. Paleontological resource materials may include resources such as fossils, plant impressions, or animal tracks preserved in rock. The qualified paleontologist shall contact the Natural History Museum of Los Angeles County or other appropriate facility regarding any discoveries of paleontological resources.<br>If the qualified paleontologist determines that the discovery represents a potentially significant paleontological resource, additional investigations and fossil recovery may be required to mitigate adverse impacts from project implementation. If avoidance is not feasible, the paleontological resources shall be evaluated for their significance. If the resources are not significant, avoidance is not necessary. If the resources are significant, they shall be avoided to ensure no adverse effects, or such effects must be mitigated. Construction in that area shall not resume until the resource appropriate measures are recommended | Project Applicant | During Construction | City of Lemoore | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
|---|---|---|---|---|
| or the materials are determined to be less than significant. If the resource is significant and fossil recovery is the identified form of treatment, then the fossil shall be deposited in an accredited and permanent scientific institution. Copies of all correspondence and reports shall be submitted to the Lead Agency. | | | | |
| **Hazards and Hazardous Materials** | | | | |
| **HAZ – 1:**<br>Prior to the issuance of grading or building permits, the Project proponent or contractor shall:<br>i. Provide a site plan that clearly delineates the locations of all known oil wells and the 10-foot no-build radius around each well. A copy of the map shall be submitted to the California Department of Conservation, Geologic Energy Management Division (CalGEM), and the City of Lemoore Community Development Department.<br>ii. Record the information regarding presence and location of the abandoned well in the County Recorder's title information of the Project site. | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore | |
| **HAZ – 2:**<br>In the event that other abandoned or unrecorded wells are uncovered or damaged during excavation or grading activities, all work shall cease in the vicinity of the well, and the California Department of Conservation, Geologic Energy Management Division (CalGEM), shall be contacted for requirements and approval; copies of said approvals shall be submitted to the City of Lemoore Community Development | Project Applicant | During construction | City of Lemoore | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
|---|---|---|---|---|
| Department CalGEM, may determine that remedial plugging operations may be required. | | | | |
| **HAZ-3:** As a best management practice, prior to the issuance of grading permits, the areas of surface staining located near the diesel AST and engine shall be excavated, drummed, and removed from the subject property for proper off-site disposal. Additionally, secondary containment shall be provided for the diesel AST in order to prevent an accidental release from adversely impacting the subject property. Evidence of compliance shall be submitted to the City of Lemoore Community Development Department. | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore | |
| **Hydrology and Water Quality** | | | | |
| **HYD - 1:** a) Prior to issuance of grading permits or ground disturbance, the Project proponent shall provide approval of the proposed annexation into the City of Lemoore's service area. b) The Project proponent shall offer the City 100 water shares (150 acre feet) of water. Documentation of the annexation and offer of water shall be provided to the City Community Development Department. | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore | |
| **HYD - 2:** Prior to issuance of building permits, the Project proponent shall pay water service impact fees for new development. The fee, or equivalent in-lieu, will be determined by the City of Lemoore. Evidence of the payment of impact fees shall be submitted to the City Community Development Department. | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
|---|---|---|---|---|
| | | | | |
| **Noise** | | | | |
| **NOI - 1:**<br>a) All construction equipment shall be equipped with noise control devices (e.g. mufflers) in accordance with manufacturers' specifications throughout construction. Construction equipment shall be periodically inspected to ensure proper maintenance and presence of noise control devices (e.g. lubrication, mufflers that do not leak, and shrouding).<br>b) Equipment staging and laydown areas shall be located at the furthest practical distance from nearby residential land uses. To the extent possible, staging and laydown areas should be located at least 500 feet of existing residential dwellings.<br>c) c) Haul trucks shall not be allowed to idle for periods greater than five minutes, except as needed to perform a specified function (e.g., concrete mixing). | Project Applicant | During Construction | City of Lemoore | |
| **NOI - 2:**<br>Prior to the issuance of grading permits, signs legible at a distance of 50 feet shall be posted at the construction site and near adjacent sensitive receptors displaying hours of construction activities and providing the contact phone number of a designated noise disturbance coordinator. | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore | |
| **Public Services** | | | | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
|---|---|---|---|---|
| **PUB-1:** Prior to issuance of building permits, the Project proponent shall pay fire service impact fees for new development. The fee, or equivalent in-lieu, will be determined by the Lemoore Volunteer Fire Department in conjunction with the City of Lemoore. Evidence of the payment of impact fees shall be submitted to the City Community Development Department. | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore | |
| **PUB-2:** Prior to issuance of building permits, the Project proponent shall pay police service impact fees for new development. The fee, or equivalent in-lieu, will be determined by the Lemoore Police Department in conjunction with the City of Lemoore. Evidence of the payment of impact fees shall be submitted to the City Community Development Department. | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore | |
| **PUB-3:** Prior to issuance of building permits, the Project proponent shall pay school impact fees. The Project's school impact fees will be determined by the Lemoore Union High School District and the Lemoore Union Elementary School District. Evidence of the payment of impact fees shall be submitted to the City Community Development Department. | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore | |
| **PUB-4:** Prior to issuance of building permits, the Project proponent shall pay parkland impact fees or in-lieu equivalent to maintain the City's established requirement of five acres of parkland per thousand residents. The impact fees or in-lieu equivalent will apply to the 3.69 acres of parkland not being constructed by the Project, as set forth in the City's General Plan and Lemoore City Municipal Code Title 9, Chapter 7, Article N. The Project's parkland impact fees will be | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
|---|---|---|---|---|
| determined by the City of Lemoore. Evidence of the payment of impact fees shall be submitted to the City Community Development Department. | | | | |
| **Transportation** | | | | |
| **TRA-1:**<br>Prior to issuance of building permit, the Project shall pay its fair share cost percentages and/or construct the recommended improvements as determined by the City. The following are the required improvements:<br>○ Liberty Drive / Hanford-Armona Road<br>▪ Signalize the intersection with protected left-turn phasing in all directions while retaining the existing lane geometrics. | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore | |
| **TRA-2:**<br>Prior to the issuance of construction or building permits, the project developer shall:<br>1. Obtain all necessary encroachment permits for work within the road right-of-way or use of oversized/overweight vehicles that will utilize City-maintained roads, which may require California Highway Patrol or a pilot car escort. Copies of the approved traffic plan and issued permits shall be submitted to the City of Lemoore Community Development Department and Public Works Department-Development Review.<br>2. Prepare and submit a Construction Traffic Control Plan to City of Lemoore Public Works Department-Development Review and the Community Development Department, as appropriate, for | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
|---|---|---|---|---|
| approval. The Construction Traffic Control Plan shall be prepared in accordance with both the California Department of Transportation Manual on Uniform Traffic Control Devices and Work Area Traffic Control Handbook and shall include, but not be limited to, the following issues:<br>a. Timing of deliveries of heavy equipment and building materials;<br>b. Directing construction traffic with a flag person;<br>c. Placing temporary signing, lighting, and traffic control devices if required, including, but not limited to, appropriate signage along access routes to indicate the presence of heavy vehicles and construction traffic;<br>d. Ensuring access for emergency vehicles to the project site;<br>e. Temporarily closing travel lanes or delaying traffic during materials delivery, transmission line stringing activities, or any other utility connections;<br>f. Maintaining access to adjacent property; and,<br>g. Specifying both construction-related vehicle travel and oversize load haul routes, minimizing construction traffic during the AM and PM peak hour, distributing construction traffic flow across alternative routes to access the project sites, and avoiding residential neighborhoods to the maximum extent feasible. | | | | |
| **TRA-3:**<br>a) Prior to a Subdivision Notice of Completion, the Project shall construct Class I Bikeways along the following: | Project Applicant | Prior to issuance of occupancy permits | City of Lemoore | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
|---|---|---|---|---|
| • South side of Street 'S' between Lemoore Avenue and the eastern boundary of the Project.<br>• Street 'G' between Street 'S' and Street 'P'. the Project shall install Class II Bikeways along Street 'S' between Lemoore Avenue and the eastern boundary of the Project and along Mary Drive between Street 'I' and Lacey Boulevard.<br>b) Adjacent to the Project, Class II Bikeways shall be constructed along the following:<br>• The frontage along Lemoore Avenue between Lacey Boulevard and Glendale Avenue<br>• The frontage along Lacey Boulevard between Lemoore Avenue the eastern boundary of the Project. | | | | |
| **TRA-4:**<br>Prior to a Subdivision Notice of Completion the Project shall incorporate:<br><br>a) Intersection traffic calming features such as mini-circles at the following intersections:<br>• Beverly Drive and Street 'S',<br>• Street 'G' and Street 'S',<br>• Street 'L' and Street 'S',<br>• Street 'C' and Street 'I',<br>• Street 'D' and Street 'I',<br>• Mary Drive and Street 'I',<br>• Street 'A' and Street 'F'.<br><br>b) Street traffic calming features including on street parking throughout the Project (excluding Street 'S') at the following: | Project Applicant | Prior to issuance of occupancy permits | City of Lemoore | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
|---|---|---|---|---|
| • Between Lemoore Avenue and the eastern boundary of the Project,<br>• Along Mary Drive between Lacey Boulevard and Street 'J',<br>• Along median islands on Street 'S' between Lemoore Avenue and Street 'D'<br>• Along Mary Drive between Lacey Boulevard and Street 'I',<br>• Planter strips with street trees throughout the Project. | | | | |
| **TRA-5:**<br>Prior to issuance of an Occupancy permit for the multi-family residential component, the Project shall implement a minimum of 14 bike parking spaces. | Project Applicant | Prior to issuance of occupancy permits | City of Lemoore | |
| **Tribal Cultural Resources** | | | | |
| **TRI-1:**<br>Prior to any ground disturbance, a surface inspection of the site shall be conducted by a Tribal Monitor. The Tribal Cultural Staff shall monitor the site during grading activities. The Tribal Staff shall provide pre-project-related activities briefings to supervisory personnel and any excavation contractor, which will include information on potential cultural material finds, and any excavation contractor, which will include information on potential cultural material finds, and on the procedures, to be enacted if resources are found. Prior to any ground disturbance, the applicant shall offer the Santa Rosa Rancheria Tachi Yokut Tribe the opportunity to provide a Native American Monitor during ground-disturbing activities. Tribal participation would be dependent upon the availability and interest of the tribe. | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
|---|---|---|---|---|
| **TRI-2:** In the event that historical or archaeological cultural resources are discovered during project-related activities or decommissioning, operations shall stop within 100 feet of the find, and a qualified archeologist shall determine whether the resource requires further study. The qualifies archaeologist shall determine the measures that shall be implemented to protect the discovered resources including, but not limited to, excavation of the finds and evaluation of he finds and evaluation of the finds in accordance with § 15064.5 of the CEQA Guidelines. Measures may include avoidance, preservation in-place, recordation, additional archaeological resting, and data recovery, among other options. Any previously undiscovered resources found during project-related activities within the project area shall be recorded on appropriate Department of Parks and Recreation forms and evaluated for significance. No further ground disturbance shall occur in the immediate vicinity of the discovery until approved by the qualified archaeologist.<br>The Lead Agency, along with other relevant or tribal officials, shall be contacted upon the discovery of cultural resources to begin coordination on the disposition of the find(s). Treatment of any significant cultural resources shall be undertaken with the approval of the Lead Agency. | Project Applicant | During Construction | City of Lemoore | |
| **TRI-3:** Upon coordination with the Lead Agency, any archaeological artifacts recovered shall be donated to an appropriate tribal custodian or a qualified scientific institution where they would be afforded applicable cultural resources laws and guidelines. | Project Applicant | During Construction | City of Lemoore | |

| Mitigation Measure | Party responsible for Implementing Mitigation | Timing | Party responsible for Monitoring | Verification (name/ date) |
|---|---|---|---|---|
| **TRI-4:** If human remains are discovered during project-related activities or operational activities, further excavation or disturbance shall be prohibited pursuant to Section 7050.5 of the California Health and Safety Code. The specific protocol, guidelines, and channels of communication outlined by the Native American Heritage Commission, in accordance with Section 7050.5 of the Health and Safety Code, Section 5097.98 of the Public Resources Code (Chapter 1492, Statutes of 1982, Senate Bill 297), and Senate Bill 447 (Chapter 44, Statutes of 1987) shall be followed. Section 7050.5(c) shall guide the potential Native American involvement, in the event of discovery of human remains, at the direction of the County Coroner. | Project Applicant | During Construction | City of Lemoore | |
| **Utilities and Service Systems** | | | | |
| **UTIL-1:** Prior to issuance of building permits, the Project proponent shall pay impact fees for its fair share of wastewater (sewer) services. The fee, or equivalent in-lieu, will be determined by the City of Lemoore. Evidence of the payment of impact fees shall be submitted to the City Community Development Department. | Project Applicant | Prior to issuance of grading or building permits | City of Lemoore | |

## RESOLUTION NO. 2022-04

### A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF LEMOORE RECOMMENDING APPROVAL OF ANNEXATION NO. 2020-01, GENERAL PLAN AMENDMENT NO. 2020-03, ZONING MAP AMENDMENT NO. 2020-03, PLANNED UNIT DEVELOPMENT NO. 2020-02, TENTATIVE TRACT MAP 932, AND MAJOR SITE PLAN REVIEW NO. 2020-02, TO SUBDIVIDE AND DEVELOP APPROXIMATELY 156 ACRES INTO A RESIDENTIAL COMMUNITY WITH A MIX OF SINGLE-FAMILY AND MULTI-FAMILY HOUSING UNITS, LOCATED ON THE EAST SIDE OF 18TH AVENUE (LEMOORE AVENUE), SOUTH OF LACEY BOULEVARD AND NORTH OF E. GLENDALE AVENUE, JUST OUTSIDE THE LEMOORE CITY LIMITS

At a Regular Meeting of the Planning Commission of the City of Lemoore duly called and held on April 11, 2022, at 7:00 p.m. on said day, it was moved by Commissioner Etchegoin, seconded by Commissioner Franklin, and carried that the following Resolution be adopted:

**WHEREAS,** Assemi Group has requested approval of an Annexation, General Plan Amendment, Pre-Zoning, Planned Unit Development, Tentative Subdivision Map, and a Major Site Plan Review of 156 acres with 547 single-family lots, multi-family units, parks, and a ponding basin, located on the east side of 18th Avenue (Lemoore Avenue), south of Lacey Boulevard and north of E. Glendale Avenue, just outside City limits (APN: 021-030-057); and

**WHEREAS,** the annexation area is 156 acres in size with proposed designations of Low Density Residential, Medium Density Residential, High Density Residential, Parks/Recreation, and Greenway/Detention Basin in the City of Lemoore General Plan; and

**WHEREAS,** a Sphere of Influence amendment will also be proposed to the Local Agency Formation Commission of Kings County to include the project site within the City's Sphere of Influence; and

**WHEREAS,** an Environmental Impact Report (SCH#2020080314) was prepared in conformance with the California Environmental Quality Act (CEQA) Guidelines, and it was found that the project would have significant effects on the environment even after mitigation. Therefore, a Statement of Overriding Conditions has been prepared for this project; and

**WHEREAS**, the Lemoore Planning Commission held a duly noticed public hearing at its April 11, 2022, meeting.

**NOW THEREFORE, BE IT RESOLVED** that the Planning Commission of the City of Lemoore hereby makes the following findings regarding the proposed projects, based on facts detailed in the April 4, 2022, staff report, which is hereby incorporated by reference, as well as the evidence and comments presented during the Public Hearing:

1. The social, economic, and environmental benefits of the Project outweigh the potential unavoidable significant impacts and render those potential significant impacts acceptable based on the following considerations:
   a. The Project reflects the stated vision, goals and objectives of the City of Lemoore.

b. The Project will ensure orderly development patterns to accommodate projected increases in population through buildout of the General Plan by providing strategic land use designations that avoid or minimize land use conflicts.

c. The Project will provide a variety of housing opportunities with a range of densities, styles, sizes and values that will be designed to satisfy existing and future demand for quality housing in the area.

d. The Project will maximize and broaden the City's sales tax base by providing local and regional tax-generating uses.

e. The Project will improve and maximize economic viability of the Project site and area by providing strategic land use designations.

f. The Project will provide a residential development that assists the City in meetings its General Plan and Housing Element requirements and objectives.

2. Annexation of the existing site will implement the City's General Plan goals by developing residential uses.

3. The General Plan Amendment is in the public interest, and the General Plan, as amended, will remain internally consistent.

4. The Zoning Map Amendment of the map is consistent with the General Plan goals, policies, and implementation programs.

5. The Planned Unit Development (PUD) is compatible and in conformity with public convenience, general welfare, and good land use and zoning practice. The PUD provides for alternative development standards that will increase the density of the site while avoiding negative impacts.

6. The PUD will not be detrimental to the health, safety, and general welfare of the City.

7. The PUD will not adversely affect the orderly development of property or the preservation of property values as the project involves the development of well-designed single-family homes.

8. The Tentative Subdivision Map is consistent with the General Plan and all applicable provisions of the Zoning Code.

9. The proposed project will not be substantially detrimental to adjacent property and will not materially impair the purposes of the Zoning Ordinance or the public interest.

10. As proposed and conditioned herein, the site design of the project is consistent with the new residential development standards in the Zoning Ordinance, as modified by the Planned Unit Development.

11. The proposed project is consistent with the objectives of the General Plan and complies with applicable zoning regulations, including the proposed overlay zone for the Planned Unit Development, specific plan provisions, and improvement standards adopted by the City.

12. The proposed project will not create conflicts with vehicular, bicycle, or pedestrian transportation modes of circulation.

13. The project's lot sizes are consistent with densities in the General Plan and are appropriate for this site.

**BE IT FURTHER RESOLVED** that the Planning Commission of the City of Lemoore recommends approval of the Annexation 2020-01, General Plan Amendment No. 2020-03, Zoning Map Amendment 2020-03, Tentative Tract Map 932, Planned Unit Development No. 2020-02, Major Site Plan Review No. 2020-02, subject to the following conditions:

1. The site shall be developed consistent with the approved Tentative Map, as modified by the Planned Unit Development, these conditions, and applicable development standards found in the Zoning Ordinance and Lemoore (City) Municipal Code.

2. The site shall be developed consistent with this report and with the Site Plan Review comments.

3. The project shall be developed and maintained in substantial compliance with the Tentative Map, except for any modifications that may be needed to meet these conditions of approval.

4. The final subdivision map shall be submitted in accordance with City ordinances and standards.

5. The 29 residential lots that are proposed along the southern edge of the proposed project, depicted as Lots 93 – 121, shall be restricted to single story homes.

6. The developer shall incorporate the mitigation measures as identified in the Environmental Impact Report into the project, including payment of fair share impact fees for improvements to the Liberty Drive/Hanford-Armona Road intersection.

7. Plans for all public and private improvements, including but not limited to, water, sewer, storm drainage, road pavement, curb and gutter, sidewalk, streetlights, landscaping, and fire hydrants shall be approved by the City Engineer, and these improvements shall be completed in accordance with the approved plans to the satisfaction of the Public Works Department.

8. On-site and off-site traffic and street improvements shall be constructed per the Site Plan Review comments and the mitigation measures in the mitigated negative declaration.

9. Perimeter arterial roadways shall be constructed and widened per City standards and the cross-sections on the Tentative Map as follows:

   - In Phase 1, half of West Lacey Boulevard and 18th Avenue (Lemoore Avenue) will be constructed as arterial streets (adjacent to project site). The road currently "Street S" will be built according to City standards for collector. The (unnamed) future collector running north/south at the western edge of the project will be provided only for In emergency access for fire and emergency vehicles during this phase.

   - Phase 2, the (unnamed) future collector running north/south at the western edge of the project will be built to City standards for collector.

10. Ponding basin and storm drainage improvements shall be constructed per the Major Site Plan Review comments.

11. A landscaped trail along current "Street S" and along current "Street G" between the community park and Trailhead Park shall be constructed prior to the final inspection of the 5th new home constructed in Phase 1. The acreage of the landscaped area may be counted toward park land dedication requirements in Section 8-7N-4 of the City Municipal Code. The landscaping will include but not be limited to trees, shrubbery, and grass. Signage at the trail ends shall be required.

12. Parks and trails depicted in the proposed plans shall be developed by the developer and then deeded to City. Park land in-lieu fees shall be paid to the City if the acres provided for the park and landscaped trail on the improvement plans are not sufficient, in accordance with the procedures in Section 8-7N-4 of the City Municipal Code. Fees shall be paid prior to approval of the Final Map.

13. A public facilities maintenance district (PFMD) shall be formed in conjunction with the Final Map acceptance in order to provide the maintenance costs for the park, landscape trail, common landscaping, street maintenance, and other improvements in accordance with existing City policy.

14. The project shall be subject to the applicable development impact fees adopted by resolution of the City Council. Per agreement with the developer will pay the water, sewer, and storm drainage impact fees currently under consideration.

15. In conjunction with approval of the Final Map, a noise and odor easement shall be recorded on all lots created, in a form acceptable to the City Attorney, to acknowledge the presence of nearby industry, railroad, and freeways, and the right of the such uses to continue to emit such noise and odors as are otherwise allowable by law and to ensure that such uses in these areas are not unreasonably hindered by residential users and owners that move in or nearby at a later date.

16. In conjunction with approval of the Final Map, an easement shall be recorded on all lots created identifying that the property is near a military installation subject to high aircraft noise, low level aircraft, aircraft tests, and/or other military related issues.

17. The developer shall comply with the standards, provisions, and requirements of the San Joaquin Valley Air Pollution Control District that relate to the project.

18. A minimum six-foot eight-inch-high block wall with decorative columns and caps at least every 100 feet shall be constructed per City standards adjacent to 18th Avenue (Lemoore Avenue) and Lacey Boulevard. Landscaping shall be added to cover at least 50% of the wall within five years of installation.

19. Fire hydrant and connection types and locations shall be approved by the Lemoore Volunteer Fire Department.

20. Concrete pads for installation of mailboxes shall be provided in accordance with determinations made by the Lemoore Postmaster.

21. Street trees from the City approved street tree list shall be planted with root barriers as per Public Works Standards and Specifications.

22. Streetlights shall be provided within the project as per City local streetlight standards.

23. One or more Kings Area Rural Transit (KART) bus stops shall be constructed, if required, at locations directed by KART.

24. The sidewalk type along local streets (parkway type or curb adjacent type) shall be consistent throughout all phases of the subdivision, as per City standard.

25. The sidewalk type along arterial and collector streets shall be parkway type and consistent with City standards.

26. Any existing roadway, sidewalk, or curb and gutter that is damaged during construction shall be repaired or replaced to the satisfaction of the Public Works Department.

27. All signs shall require a sign permit separate from the building permit.

28. Lot sizes less than 7,000 square feet, consistent with the sizes shown on the Tentative Map, shall be adopted per the Planned Unit Development established by the City Council.

29. The building setbacks shall be per the adopted Planned Unit Development established by the City Council. The minimum building setbacks recommended to the Council are as follows:

| **Required Setbacks** | **PUD No. 2020-02** |
|---|---|
| Front to Living Space (minimum) | 15 feet for compact and medium lots<br>12 feet to covered porch for compact and medium lots<br>20 feet for estate lots14 feet to covered porch for estate lots |
| Front to Garage (minimum) | 20 feet |
| Interior Side (minimum) | 5 feet |
| Street Side (minimum) | 10 feet |
| Rear (minimum) | 10 feet for compact lots<br>15 feet for medium lots<br>20 feet for estate lots |
| Height (maximum) | 35 feet |

30. The project and all subsequent uses shall meet the requirements found in Section 9-5B-2 of the Zoning Ordinance related to noise, odor, and vibration, and maintenance.

31. The Tentative Subdivision Map approval shall expire two years from the date of City Council approval, unless a Final Map is filed or an extension is granted via legislation or by the City, in accordance with the Subdivision Map Act. Expiration dates for the Major Site Plan Review and Planned Unit Development shall run consistent with the expiration date of the Tentative Map.

Passed and adopted at a Regular Meeting of the Planning Commission of the City of Lemoore held on April 11, 2022, by the following votes:

**AYES:** Etchegoin, Franklin, Brewer, Clement, Couch, Dey
**NOES:**
**ABSTAINING:**
**ABSENT:** Meade

**APPROVED:**

Michael Dey, Chairperson

**ATTEST:**

Kristie Baley, Commission Secretary

City of
LEMOORE
CALIFORNIA

711 W. Cinnamon Drive ● Lemoore, California 93245 ● (559) 924-6744

# Staff Report

**Item No: 4-3**

**To:** **Lemoore City Council**

**From:** **Steve Brandt, City Planner**

**Date:** **April 25, 2022** **Meeting Date:** **May 3, 2022**

**Subject:** **Resolution 2022-20 – Approving General Plan Amendment No. 2022-01 Located in the Unplanned Area South of Lacey Boulevard Between State Route 41 and 17th Avenue**

**Strategic Initiative:**

| | |
|---|---|
| ☐ Safe & Vibrant Community | ☒ Growing & Dynamic Economy |
| ☐ Fiscally Sound Government | ☐ Operational Excellence |
| ☒ Community & Neighborhood Livability | ☐ Not Applicable |

**Proposed Motion:**

Approve Resolution 2022-20, Approving General Plan Amendment No. 2022-01 Located in the Unplanned Area South of Lacey Boulevard Between State Route 41 and 17th Avenue.

**Recommendation:**

The Planning Commission held a public hearing on April 11, 2022. The Commission, on a 6-0 vote, recommended approval of the general plan amendment.

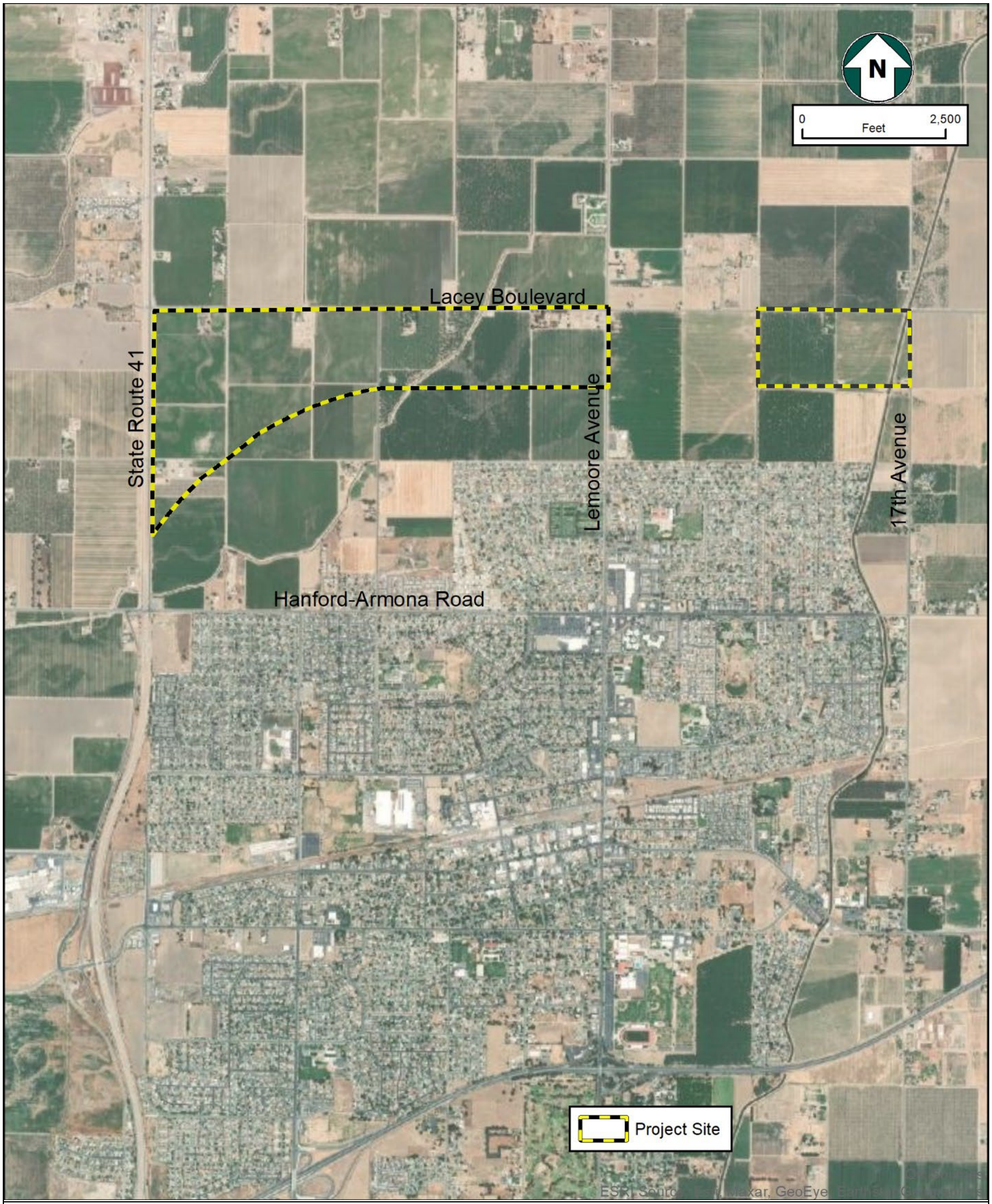
**Project Proposal:**

The proposal was initiated by the City of Lemoore. The City Manager and City Planner met with Kings LAFCo staff in November 2021 to discuss several potential amendments to the City's sphere of influence (SOI). The City Council had already directed that the City request an expansion of the SOI for the Casaca annexation located at the southeast corner of Idaho Avenue and 19th Avenue. The Lacey Ranch development project also requires an SOI amendment. During the discussion, it was agreed that all SOI amendments would need to be presented to LAFCo for approval as a single request. Given that only one combined request can be made, City staff would like the entire area south of Lacey Boulevard between

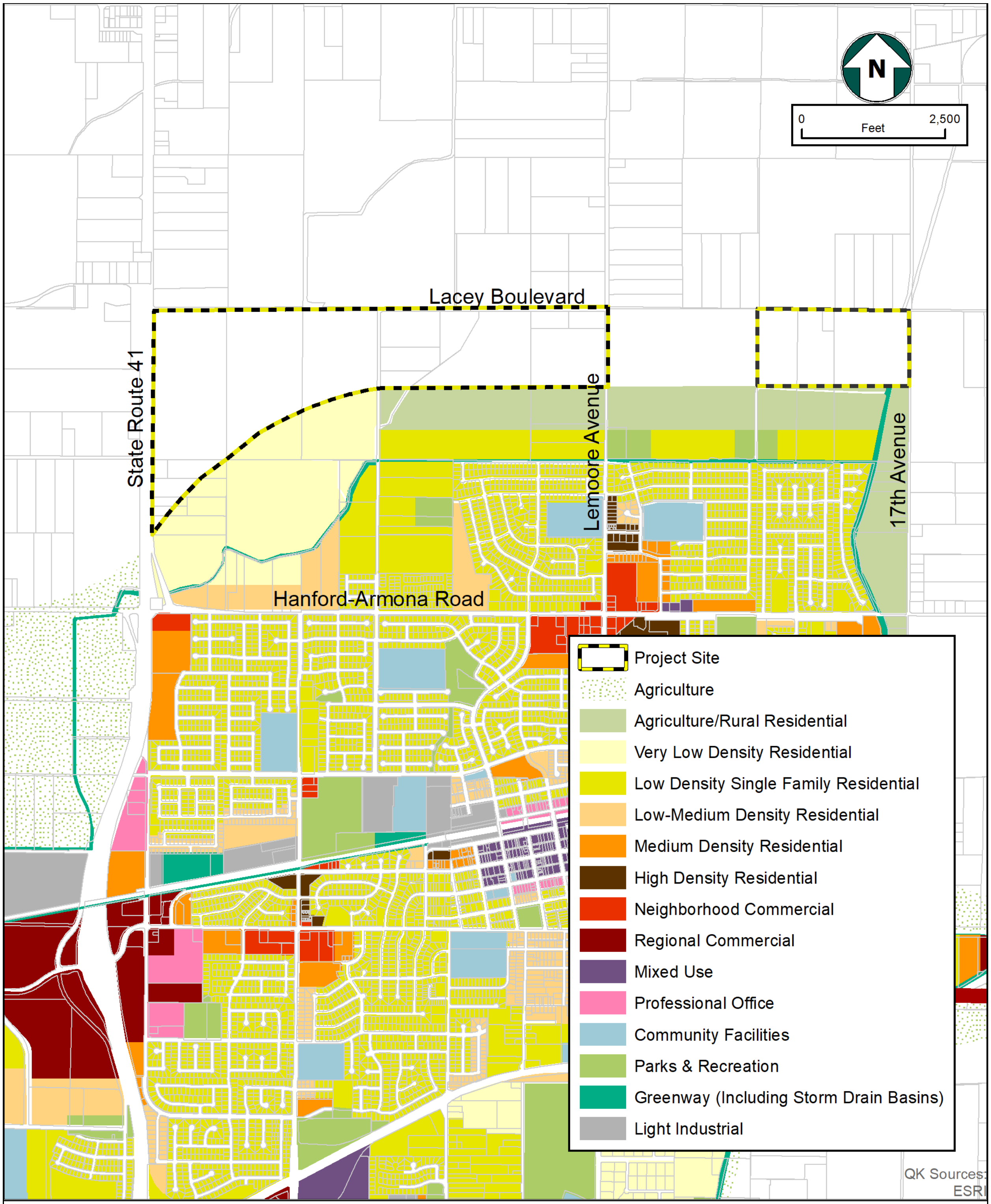
Highway 41 and 17th Avenue to also be included in the SOI. Before such a request can be made to LAFCo, all of the area must have a City general plan land use designation. Since the City is not proposing to open up these areas for urban development, the Agriculture land use designation is being proposed. This designation will allow all existing uses to continue as they are currently. The existing and proposed land use designations are shown on maps on pages 4 and 5 of this report.

| | |
|---|---|
| **Applicant** | City of Lemoore |
| **Location** | The unplanned area south of Lacey Boulevard between State Route 41 and 17th Avenue |
| **Existing Land Use** | Agriculture with scattered rural residences |
| **APN(s)** | 021-020-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -023 -025, -027, -028, -030, -031; and 021-030-006, -062, -069, -070) |
| **Zoning** | none – all parcels outside the city limits (County AL-10) |
| **General Plan** | Existing – none Proposed - Agriculture |

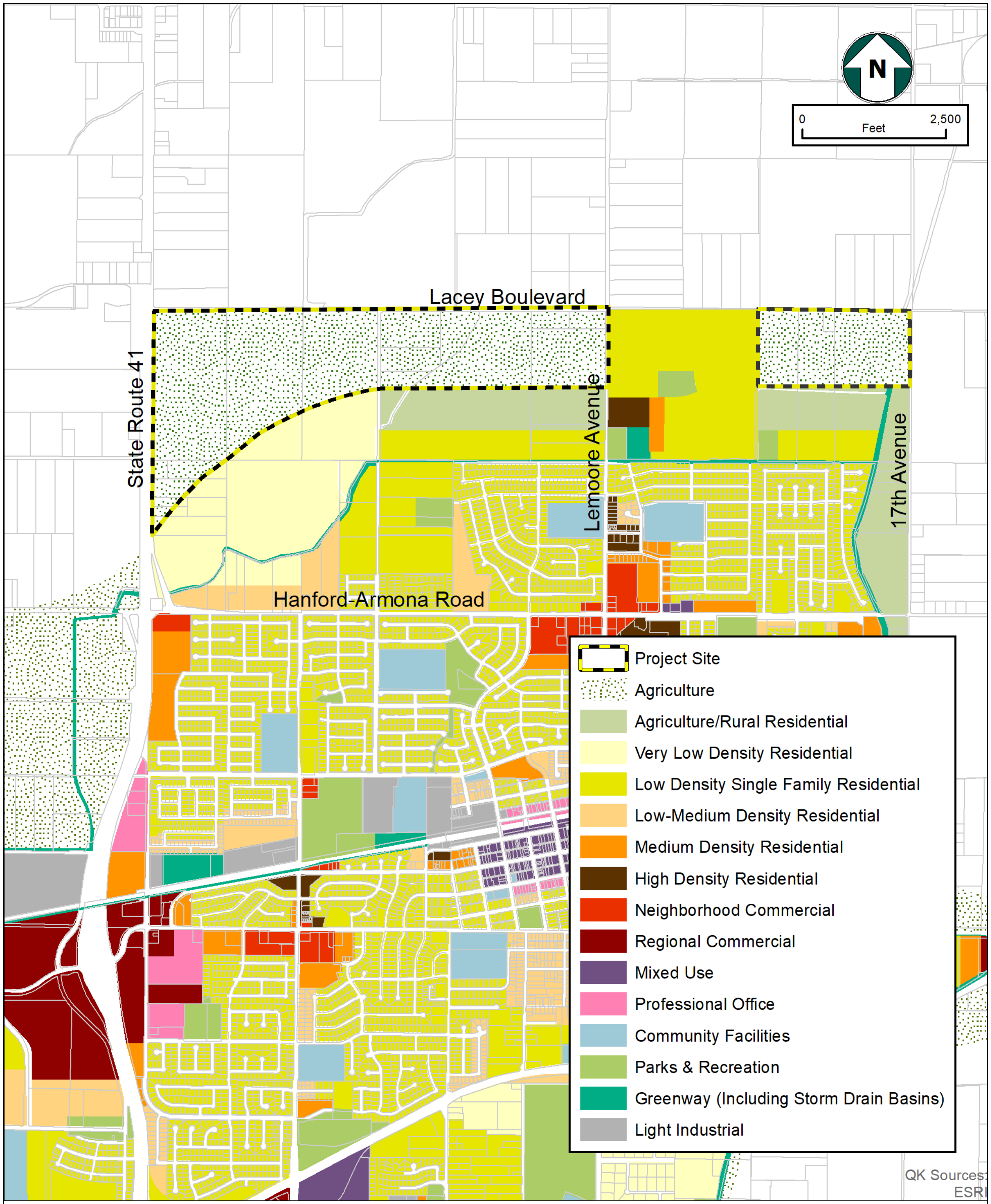
If both this general plan amendment and the Lacey Ranch project are approved by the Council, then City staff will submit one request for Sphere of Influence amendment to LAFCo. The existing and proposed Sphere of Influence is shown on page 6 of this report. This is the same map that was included at the end of the draft Municipal Services Review that the Council reviewed at the April 5, 2022, study session.



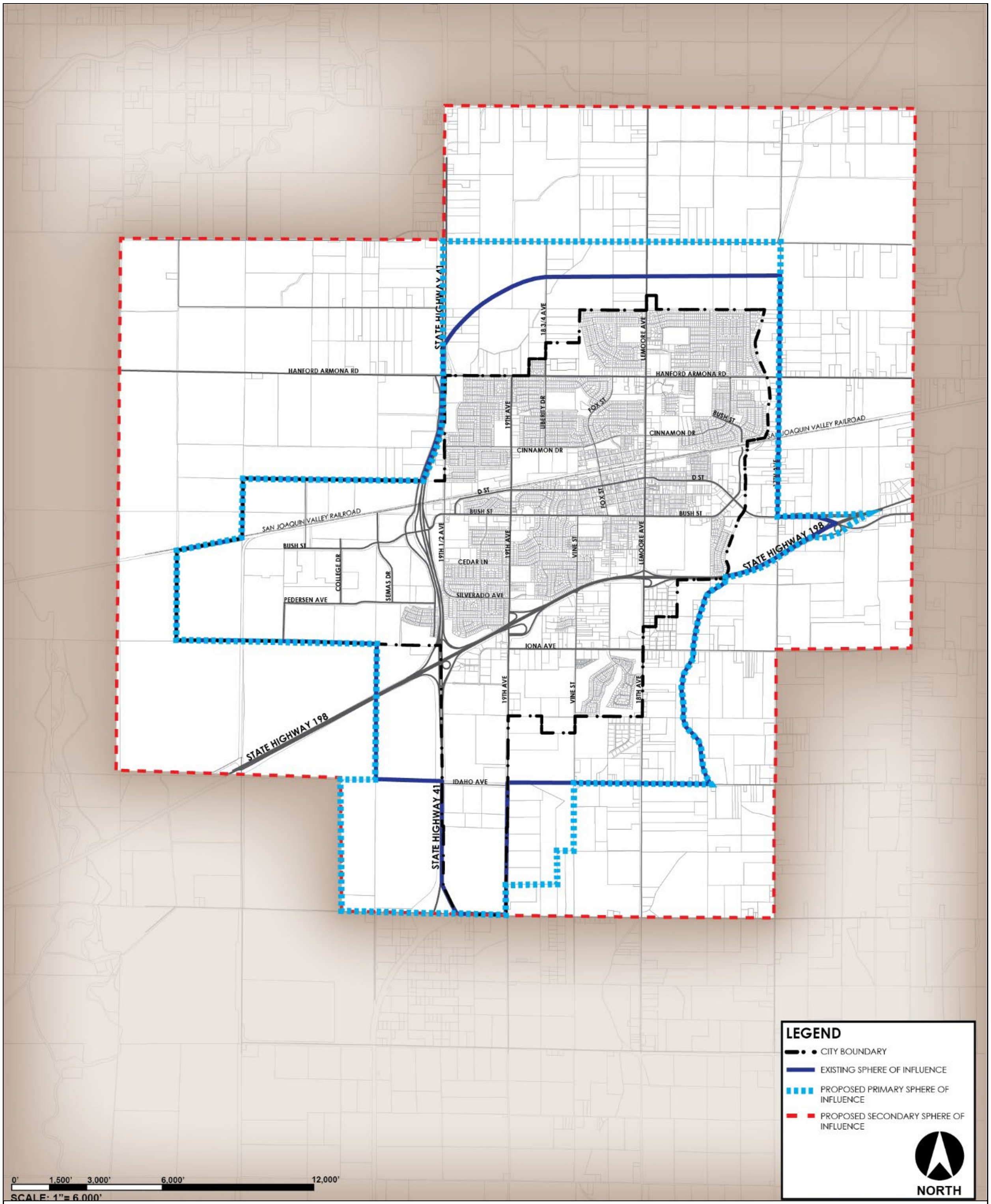

**Project Site**




**Map of <u>Existing</u> General Plan Land Use Designations**




**Map of Proposed General Plan Land Use Designations**




## Map of Existing and Proposed Sphere of Influence

**Environmental Assessment:**
Pursuant to California Environmental Quality Act (CEQA), it has been determined that this project is exempt from additional CEQA processes because the proposed general plan amendment falls within the common sense exemption in Section 15061(b)(3) of the CEQA Guidelines, which states that CEQA only applies to projects that have a “significant effect on the environment” as defined in Public Resources Code section 21068 and Section 15382 of the CEQA Guidelines, as being a substantial or potentially substantial, adverse change in the environment.

**Recommended Findings:**
Staff recommends that the City Council make the following findings and recommend approval of the project to the City Council:

1. All affected parcels are in agricultural use with some scattered rural residences that would be consistent with the Agriculture land use designation.

2. The general plan amendment is in the public interest and the General Plan, as amended, will remain internally consistent.

3. The general plan amendment will allow the City of Lemoore to request that its sphere of influence be expanded to Lacey Boulevard.

**Financial Consideration(s):**
None.

**Alternatives or Pros/Cons:**
Alternatively, the Council could choose not to approve the general plan amendment. This would mean that the City could not request that the project area be included in the new City Sphere of Influence.

| **Attachments:** | | **Review:** | **Date:** |
|---|---|---|---|
| ☒ Resolution: | 2022-20 | ☒ Asst. City Manager | 04/25/2022 |
| ☐ Ordinance: | | ☒ City Attorney | 04/28/2022 |
| ☐ Map | | ☒ City Clerk | 04/28/2022 |
| ☐ Contract | | ☒ Finance | 04/27/2022 |
| ☐ Other | | ☒ City Manager | 04/27/2022 |

# RESOLUTION NO. 2022-20

## A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LEMOORE APPROVING GENERAL PLAN AMENDMENT NO. 2022-01 LOCATED IN THE UNPLANNED AREA SOUTH OF LACEY BOULEVARD BETWEEN STATE ROUTE 41 AND 17TH AVENUE

**WHEREAS,** the City of Lemoore has initiated a General Plan Amendment for all parcels that do not have a General Plan land use designation and are located in the unplanned area south of Lacey Boulevard between State Route 41 and 17th Avenue (APNs: 021-020-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -023 -025, -027, -028, -030, -031; and 021-030-006, -062, -069, -070); and

**WHEREAS,** the proposal is to designate these parcels Agriculture in the Lemoore General Plan; and

**WHEREAS**, the Lemoore Planning Commission held a duly noticed public hearing at its April 11, 2022, meeting, and recommended approval of the general plan amendment on a 6-0 vote.

**NOW THEREFORE, BE IT RESOLVED** that the City Council of the City of Lemoore makes the following findings, based on facts detailed in the May 3, 2022, staff report, and other documents found in the administrative record, which are hereby incorporated by reference, as well as the evidence and comments presented during the public hearing:

1. Pursuant to California Environmental Quality Act (CEQA), it has been determined that this project is exempt from additional CEQA processes because the proposed general plan amendment falls within the common sense exemption in Section 15061(b)(3) of the CEQA Guidelines, which states that CEQA only applies to projects that have a "significant effect on the environment" as defined in Public Resources Code section 21068 and Section 15382 of the CEQA Guidelines, as being a substantial or potentially substantial, adverse change in the environment.

2. All affected parcels are in agricultural use with some scattered rural residences that would be consistent with the Agriculture land use designation.

3. The general plan amendment is in the public interest and the General Plan, as amended, will remain internally consistent.

4. The general plan amendment will allow the City of Lemoore to request that its sphere of influence be expanded to Lacey Boulevard.

**BE IT FURTHER RESOLVED** that the City Council of the City of Lemoore hereby approves General Plan Amendment No. 2022-01.

**PASSED AND ADOPTED** at a Meeting of the City Council of the City of Lemoore held on the 3rd day of May 2022 by the following vote:

AYES:

NOES:

ABSTAINING:

ABSENT:

| ATTEST: | APPROVED: |
| --- | --- |
| ______________________ | ______________________ |
| Marisa Avalos<br>City Clerk | Stuart Lyons<br>Mayor |

## RESOLUTION NO. 2022-05

## A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF LEMOORE RECOMMENDING APPROVAL OF GENERAL PLAN AMENDMENT NO. 2022-01 LOCATED IN THE UNPLANNED AREA SOUTH OF LACEY BOULEVARD BETWEEN STATE ROUTE 41 AND 17TH AVENUE

At a Regular Meeting of the Planning Commission of the City of Lemoore duly called and held on April 11, 2022, at 7:00 p.m. on said day, it was moved by Commissioner Franklin, seconded by Commissioner Brewer and carried that the following Resolution be adopted:

**WHEREAS,** the City of Lemoore has initiated a General Plan Amendment for all parcels that do not have a General Plan land use designation and are located in the unplanned area south of Lacey Boulevard between State Route 41 and 17th Avenue (APNs: 021-020-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -023 -025, -027, -028, -030, -031; and 021-030-006, -062, -069, -070); and

**WHEREAS,** the proposal is to designate these parcels Agriculture in the Lemoore General Plan; and

**WHEREAS**, the Lemoore Planning Commission held a duly noticed public hearing at its April 11, 2022, meeting, and

**NOW THEREFORE, BE IT RESOLVED** that the Planning Commission of the City of Lemoore makes the following findings, based on facts detailed in the April 11, 2022, staff report, and other documents found in the administrative record, which are hereby incorporated by reference, as well as the evidence and comments presented during the public hearing:

1. Pursuant to California Environmental Quality Act (CEQA), it has been determined that this project is exempt from additional CEQA processes because the proposed general plan amendment falls within the common sense exemption in Section 15061(b)(3) of the CEQA Guidelines, which states that CEQA only applies to projects that have a "significant effect on the environment" as defined in Public Resources Code section 21068 and Section 15382 of the CEQA Guidelines, as being a substantial or potentially substantial, adverse change in the environment.

2. All affected parcels are in agricultural use with some scattered rural residences that would be consistent with the Agriculture land use designation.

3. The general plan amendment is in the public interest and the General Plan, as amended, will remain internally consistent.

4. The general plan amendment will allow the City of Lemoore to request that its sphere of influence be expanded to Lacey Boulevard.

**BE IT FURTHER RESOLVED** that the Planning Commission of the City of Lemoore hereby recommends approval of General Plan Amendment No. 2022-01.

Passed and adopted at a Regular Meeting of the Planning Commission of the City of Lemoore held on April 11, 2022, by the following votes:

**AYES:** FRanklin, Brewer, Clement, Couch, Etchegoin, Dey
**NOES:**
**ABSTAINING:**
**ABSENT:** Meade

**APPROVED:**

**Michael Dey, Chairperson**

**ATTEST:**

**Kristie Baley, Planning Commission Secretary**

City of
# LEMOORE
CALIFORNIA

711 West Cinnamon Drive ● Lemoore, California 93245 ● (559) 924-6744

# Staff Report

| | | | |
|---|---|---|---|
| **To:** | **Lemoore City Council** | | |
| **From:** | **Marisa Avalos, City Clerk** | | |
| **Date:** | **April 21, 2022** | **Meeting Date:** | **May 3, 2022** |
| **Subject:** | **Activity Update** | | |
| **Strategic Initiative:** | ☐ Safe & Vibrant Community<br>☒ Fiscally Sound Government<br>☐ Community & Neighborhood Livability | ☐ Growing & Dynamic Economy<br>☐ Operational Excellence<br>☐ Not Applicable | |

**Reports**

- Warrant Register – FY 21/22 — April 22, 2022

PEI
DATE: 04/21/2022
TIME: 11:53:24

CITY OF LEMOORE
EXPENDITURE TRANSACTION ANALYSIS

PAGE NUMBER: 1
AUDIT11

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 001 - GENERAL FUND
BUDGET UNIT - 4211 - CITY COUNCIL

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4320 | MEETINGS & DUES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11412 -02 | 13843 | 0288 LEAGUE OF CALIFO | | 11,002.00 | -11,002.00 | MEMBERSHIP DUES FOR CALEN |
| TOTAL | MEETINGS & DUES | | | | | .00 | 11,002.00 | -11,002.00 | |
| TOTAL | CITY COUNCIL | | | | | .00 | 11,002.00 | -11,002.00 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 001 - GENERAL FUND
BUDGET UNIT - 4213 - CITY MANAGER

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4340 | UTILITIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13862 | 6266 SPARKLETTS | | 18.66 | .00 | WATER SERVICE |
| TOTAL | UTILITIES | | | | | .00 | 18.66 | .00 | |
| TOTAL | CITY MANAGER | | | | | .00 | 18.66 | .00 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 001 - GENERAL FUND
BUDGET UNIT - 4215 - FINANCE

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 10946 -01 | 13850 | 7148 LOOMIS | | 241.55 | -241.55 | ARMORED CAR SERVICES |
| 10/22 | 04/21/22 | 21 | 11162 -01 | 13865 | 7278 TYLER TECHNOLOGI | | 3,840.00 | -3,840.00 | APPLICATION SERVICES/FEES |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 4,081.55 | -4,081.55 | |
| 4330 | PRINTING & PUBLICATIONS | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11376 -01 | 13830 | 6405 EINERSON'S PREPR | | 795.33 | -850.00 | SET OF TRANSMITTAL BOOKS |
| TOTAL | PRINTING & PUBLICATIONS | | | | | .00 | 795.33 | -850.00 | |
| 4340 | UTILITIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13862 | 6266 SPARKLETTS | | 21.60 | .00 | WATER SERVICE |
| TOTAL | UTILITIES | | | | | .00 | 21.60 | .00 | |
| TOTAL | FINANCE | | | | | .00 | 4,898.48 | -4,931.55 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 001 - GENERAL FUND
BUDGET UNIT - 4216 - PLANNING

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4340 | UTILITIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13862 | 6266 SPARKLETTS | | 18.66 | .00 | WATER SERVICE |
| TOTAL | UTILITIES | | | | | .00 | 18.66 | .00 | |
| TOTAL | PLANNING | | | | | .00 | 18.66 | .00 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 001 - GENERAL FUND
BUDGET UNIT - 4220 - MAINTENANCE DIVISION

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4220 | OPERATING SUPPLIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 20.12 | .00 | LTHR BRN ENAMEL |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 20.67 | .00 | FOAM SEALANT |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 17.33 | .00 | NUTS & BOLTS |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 7.81 | .00 | NUTS & BOLTS |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 8.67 | .00 | NUTS & BOLTS |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 26.49 | .00 | CUT OFF RISER |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 30.71 | .00 | WHT SXS COUPLING |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 35.99 | .00 | SPRAYER BOTTLE |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 37.02 | .00 | ALM SAT ENAMEL |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 50.91 | .00 | MARGIN TROWEL |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 257.18 | .00 | CUT OFF RISER |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 132.35 | .00 | ACETONE |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 138.26 | .00 | WHT CAP SLIP |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 156.34 | .00 | QUAD ADJ MANIFOLD |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 70.42 | .00 | WHT CAP SLIP |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 80.93 | .00 | PAINT ACCESSORY KIT |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 98.00 | .00 | WA GAL FLT PAST BASE |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 98.58 | .00 | COVER/FRAME |
| TOTAL | OPERATING SUPPLIES | | | | | .00 | 1,287.78 | .00 | |
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11002 -01 | 13832 | 5758 MARK FERNANDES | | 1,700.00 | -1,700.00 | PD, SARAH MOONEY, AND CMC |
| 10/22 | 04/21/22 | 21 | 11002 -02 | 13832 | 5758 MARK FERNANDES | | 400.00 | -400.00 | CHANGE ORDER 1- INCREASE |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 2,100.00 | -2,100.00 | |
| 4340 | UTILITIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13858 | 0363 PG&E | | 7,821.96 | .00 | 03/01/22-03/29/22 |
| TOTAL | UTILITIES | | | | | .00 | 7,821.96 | .00 | |
| TOTAL | MAINTENANCE DIVISION | | | | | .00 | 11,209.74 | -2,100.00 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 001 - GENERAL FUND
BUDGET UNIT - 4221 - POLICE

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11431 -01 | 13839 | 3088 JONES TOWING, IN | | 680.00 | -680.00 | EVIDENCE TOWING |
| 10/22 | 04/21/22 | 21 | 11040 -01 | 13842 | 0772 COUNTY OF KINGS | | 3,685.00 | -3,685.00 | COUNTY OF KINGS INFORMATI |
| 10/22 | 04/21/22 | 21 | 11152 -01 | 13841 | 1250 KINGS CO. SHERIF | | 38,389.99 | -38,389.99 | QTR 3 KINGS CO ANIMAL |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 42,754.99 | -42,754.99 | |
| 4330 | PRINTING & PUBLICATIONS | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13842 | 0772 COUNTY OF KINGS | | 75.78 | .00 | PRINT SHOP-MARCH |
| TOTAL | PRINTING & PUBLICATIONS | | | | | .00 | 75.78 | .00 | |
| 4340 | UTILITIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13820 | 5048 AT&T MOBILITY | | 940.15 | .00 | 03/03/22-04/02/22 |
| TOTAL | UTILITIES | | | | | .00 | 940.15 | .00 | |
| 4360 | TRAINING | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13829 | T3221 DAVID ORTIZ | | 157.00 | .00 | DUI DETECTION-FIELD |
| 10/22 | 04/21/22 | 21 | | 13835 | 7179 NICHOLAS GONZALE | | 157.00 | .00 | DUI DETECTION-FIELD |
| 10/22 | 04/21/22 | 21 | | 13828 | 7309 COUNTY OF TULARE | | 50.00 | .00 | TRAINING: POST CERTIF |
| 10/22 | 04/21/22 | 21 | 11418 -01 | 13828 | 7309 COUNTY OF TULARE | | 800.00 | -800.00 | TRAINING: POST CERTIFIED |
| TOTAL | TRAINING | | | | | .00 | 1,164.00 | -800.00 | |
| 4380 | RENTALS & LEASES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13822 | 1817 C.A. REDING COMP | | 497.49 | .00 | 03/02/22-04/01/22 |
| TOTAL | RENTALS & LEASES | | | | | .00 | 497.49 | .00 | |
| TOTAL | POLICE | | | | | .00 | 45,432.41 | -43,554.99 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 001 - GENERAL FUND
BUDGET UNIT - 4222 - FIRE

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4220 | OPERATING SUPPLIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 73.96 | .00 | BUILDING MAINTENANCE |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 68.62 | .00 | WATER HOSE & NOZZLE |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 60.74 | .00 | MISC. MDSE |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 39.94 | .00 | BATHROOM CLEANERS |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 28.91 | .00 | CURB PAINT BUILDINGS |
| TOTAL | OPERATING SUPPLIES | | | | | .00 | 272.17 | .00 | |
| 4230 | REPAIR/MAINT SUPPLIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 24.64 | .00 | PUMP TESTING |
| TOTAL | REPAIR/MAINT SUPPLIES | | | | | .00 | 24.64 | .00 | |
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 10981 -01 | 13849 | 0313 LEMOORE VOLUNTEE | | 18,750.00 | -18,750.00 | 2ND LVFDA QUARTERLY |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 18,750.00 | -18,750.00 | |
| 4340 | UTILITIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13820 | 5048 AT&T MOBILITY | | 294.90 | .00 | 04/03/22-05/02/22 |
| TOTAL | UTILITIES | | | | | .00 | 294.90 | .00 | |
| 4350 | REPAIR/MAINT SERVICES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13840 | 0242 JORGENSEN COMPAN | | 118.32 | .00 | SERVICE PART |
| 10/22 | 04/21/22 | 21 | | 13840 | 0242 JORGENSEN COMPAN | | 288.00 | .00 | SCBA HYDRO |
| TOTAL | REPAIR/MAINT SERVICES | | | | | .00 | 406.32 | .00 | |
| TOTAL | FIRE | | | | | .00 | 19,748.03 | -18,750.00 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 001 - GENERAL FUND
BUDGET UNIT - 4224 - BUILDING INSPECTION

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4340 | UTILITIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13862 | 6266 SPARKLETTS | | 18.65 | .00 | WATER SERVICE |
| TOTAL | UTILITIES | | | | | .00 | 18.65 | .00 | |
| TOTAL | BUILDING INSPECTION | | | | | .00 | 18.65 | .00 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 001 - GENERAL FUND
BUDGET UNIT - 4230 - PUBLIC WORKS

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4340 | UTILITIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13862 | 6266 SPARKLETTS | | 18.66 | .00 | WATER SERVICE |
| TOTAL | UTILITIES | | | | | .00 | 18.66 | .00 | |
| TOTAL | PUBLIC WORKS | | | | | .00 | 18.66 | .00 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 001 - GENERAL FUND
BUDGET UNIT - 4231 - STREETS

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4220 | OPERATING SUPPLIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11289 -01 | 13851 | 5333 MEDALLION SUPPLY | | 1,500.00 | -1,500.00 | STREET LIGHT PHOTO CELLS |
| 10/22 | 04/21/22 | 21 | 11289 -02 | 13851 | 5333 MEDALLION SUPPLY | | 129.34 | -129.34 | CHANGE ORDER- ADD FUNDS |
| TOTAL | OPERATING SUPPLIES | | | | | .00 | 1,629.34 | -1,629.34 | |
| TOTAL | STREETS | | | | | .00 | 1,629.34 | -1,629.34 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 001 - GENERAL FUND
BUDGET UNIT - 4241 - PARKS

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4220 | OPERATING SUPPLIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 12.32 | .00 | SK PARK |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 8.03 | .00 | SPORTS COMPLEX |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 24.84 | .00 | SKATE PARK |
| 10/22 | 04/21/22 | 21 | | 13818 | 6081 ALL AMERICAN POO | | 42.89 | .00 | BACKWASH HOSE |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 43.74 | .00 | LAVTAILPIECE |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 69.89 | .00 | NUTS & BOLTS |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 154.82 | .00 | LB ACCESS FTTING |
| TOTAL | OPERATING SUPPLIES | | | | | .00 | 356.53 | .00 | |
| TOTAL | PARKS | | | | | .00 | 356.53 | .00 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 001 - GENERAL FUND
BUDGET UNIT - 4296 - INFORMATION TECHNOLOGY

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4220 | OPERATING SUPPLIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13869 | T3229 MICHAEL VARGAS | | 754.30 | .00 | REIMBURSE FOR LG ULTR |
| TOTAL | OPERATING SUPPLIES | | | | | .00 | 754.30 | .00 | |
| TOTAL | INFORMATION TECHNOLOGY | | | | | .00 | 754.30 | .00 | |
| TOTAL | GENERAL FUND | | | | | .00 | 95,105.46 | -81,967.88 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 020 - TRAFFIC SAFETY
BUDGET UNIT - 4223 - PD TRAFFIC SAFETY

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4220 | OPERATING SUPPLIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11354 -01 | 13853 | 6496 MOTOROLA SOLUTIO | | 25,032.60 | -25,032.60 | APX 4000 UHFR1 MHZ MODEL |
| 10/22 | 04/21/22 | 21 | 11354 -03 | 13853 | 6496 MOTOROLA SOLUTIO | | 1,752.88 | -1,752.88 | TAX |
| TOTAL | OPERATING SUPPLIES | | | | | .00 | 26,785.48 | -26,785.48 | |
| TOTAL | PD TRAFFIC SAFETY | | | | | .00 | 26,785.48 | -26,785.48 | |
| TOTAL | TRAFFIC SAFETY | | | | | .00 | 26,785.48 | -26,785.48 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 040 - FLEET MAINTENANCE
BUDGET UNIT - 4265 - FLEET MAINTENANCE

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4220 | OPERATING SUPPLIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 10909 -02 | 13848 | 0306 LEMOORE HIGH SCH | | 1,388.74 | -1,388.74 | MARCH CNG FUEL |
| TOTAL | OPERATING SUPPLIES | | | | | .00 | 1,388.74 | -1,388.74 | |
| 4230 | REPAIR/MAINT SUPPLIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13819 | 6513 A-1 AUTO ELECTRI | | 352.81 | .00 | FLITER, LOW PRESSURE |
| 10/22 | 04/21/22 | 21 | | 13838 | 6715 INTERSTATE BILLI | | 196.30 | .00 | STEP-FUEL TANK ALUM |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 10.18 | .00 | DRAW LOCK |
| 10/22 | 04/21/22 | 21 | 11409 -01 | 13838 | 6715 INTERSTATE BILLI | | 527.45 | -527.45 | STARTER & TAX |
| 10/22 | 04/21/22 | 21 | 11410 -01 | 13854 | 7306 ONE SOURCE PARTS | | 155.68 | -155.68 | JOYSTICK MICRO-SWITCHES |
| 10/22 | 04/21/22 | 21 | 11410 -02 | 13854 | 7306 ONE SOURCE PARTS | | 588.86 | -588.86 | PRESSURE TRANSDUCER |
| 10/22 | 04/21/22 | 21 | 11410 -03 | 13854 | 7306 ONE SOURCE PARTS | | 20.19 | -20.19 | SHIPPING |
| 10/22 | 04/21/22 | 21 | 11410 -04 | 13854 | 7306 ONE SOURCE PARTS | | 53.98 | -53.98 | TAX |
| 10/22 | 04/21/22 | 21 | 11411 -01 | 13827 | 5030 COMMERCIAL RADIA | | 1,125.00 | -1,125.00 | RADIATOR |
| 10/22 | 04/21/22 | 21 | 11411 -02 | 13827 | 5030 COMMERCIAL RADIA | | 93.94 | -93.94 | TAX |
| 10/22 | 04/21/22 | 21 | 11430 -01 | 13860 | 6251 SEQUOIA EQUIPMEN | | 512.13 | -512.13 | PARTS TO REPLACE GLASS ON |
| TOTAL | REPAIR/MAINT SUPPLIES | | | | | .00 | 3,636.52 | -3,077.23 | |
| 4350 | REPAIR/MAINT SERVICES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11390 -01 | 13825 | 1714 CENTURY TRANSMIS | | 825.00 | -825.00 | RESEAL FRONT PUMP OF TRAN |
| 10/22 | 04/21/22 | 21 | 11390 -02 | 13825 | 1714 CENTURY TRANSMIS | | 145.68 | -145.68 | CHANGE ORDER 1 - ADD FUND |
| 10/22 | 04/21/22 | 21 | | 13852 | 0345 MORGAN & SLATES, | | 78.98 | .00 | PROCESSING LABOR |
| 10/22 | 04/21/22 | 21 | | 13839 | 3088 JONES TOWING, IN | | 85.00 | .00 | TOWING |
| 10/22 | 04/21/22 | 21 | | 13839 | 3088 JONES TOWING, IN | | 85.00 | .00 | TOWING #P44 |
| 10/22 | 04/21/22 | 21 | | 13852 | 0345 MORGAN & SLATES, | | 93.87 | .00 | CR RD SHAFT |
| 10/22 | 04/21/22 | 21 | | 13836 | 6146 HANFORD CHRYSLER | | 380.90 | .00 | PARTS AND LABOR |
| TOTAL | REPAIR/MAINT SERVICES | | | | | .00 | 1,694.43 | -970.68 | |
| TOTAL | FLEET MAINTENANCE | | | | | .00 | 6,719.69 | -5,436.65 | |
| TOTAL | FLEET MAINTENANCE | | | | | .00 | 6,719.69 | -5,436.65 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 050 - WATER
BUDGET UNIT - 4250 - WATER

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4220 | OPERATING SUPPLIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13868 | 2038 USA BLUEBOOK | | 442.73 | .00 | GLOVES |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 128.69 | .00 | BACKPACK SPRAYER |
| 10/22 | 04/21/22 | 21 | | 13864 | 0428 STONEY'S SAND & | | 204.82 | .00 | CONCRETE MIX 5 SACK |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 222.44 | .00 | RETRAC KNIFE/BLADES |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 11.79 | .00 | FUEL/OIL |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 13.40 | .00 | WORK GLOVE |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 14.56 | .00 | WHT MARKING PAINT |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 20.23 | .00 | BUNGEE CORD |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 47.17 | .00 | AAA BATTERY |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 47.17 | .00 | STRAIGHT BIBB |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 23.57 | .00 | BUCKETS FOR TRUCK#358 |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 25.73 | .00 | HULA-HO WEEDER |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 29.50 | .00 | PVC FSS BOX |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 30.41 | .00 | CLEANING SUPPLIES |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 31.09 | .00 | HERITAGE PARK |
| TOTAL | OPERATING SUPPLIES | | | | | .00 | 1,293.30 | .00 | |
| 4220CH | CHLORINE OPERATING SUPPLY | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 10972 -03 | 13866 | 6058 UNIVAR | | 1,183.49 | -1,183.49 | CHANGE ORDER 2- HYPOCHLOR |
| 10/22 | 04/21/22 | 21 | 10972 -03 | 13866 | 6058 UNIVAR | | 1,346.22 | -1,346.22 | CHANGE ORDER 2- HYPOCHLOR |
| 10/22 | 04/21/22 | 21 | 10972 -03 | 13866 | 6058 UNIVAR | | 2,389.18 | -2,389.18 | CHANGE ORDER 2- HYPOCHLOR |
| 10/22 | 04/21/22 | 21 | 10972 -03 | 13866 | 6058 UNIVAR | | 2,392.73 | -2,392.73 | CHANGE ORDER 2- HYPOCHLOR |
| 10/22 | 04/21/22 | 21 | 10972 -03 | 13866 | 6058 UNIVAR | | 2,595.99 | -2,595.99 | CHANGE ORDER 2- HYPOCHLOR |
| TOTAL | CHLORINE OPERATING SUPPLY | | | | | .00 | 9,907.61 | -9,907.61 | |
| 4230 | REPAIR/MAINT SUPPLIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13823 | 1323 CALIFORNIA IND. | | 468.58 | .00 | PLASTIC GRAG RING |
| 10/22 | 04/21/22 | 21 | | 13823 | 1323 CALIFORNIA IND. | | 346.19 | .00 | PLASTIC GRAB RING |
| 10/22 | 04/21/22 | 21 | | 13823 | 1323 CALIFORNIA IND. | | 154.64 | .00 | BLACK POLY PRO NUT |
| 10/22 | 04/21/22 | 21 | | 13823 | 1323 CALIFORNIA IND. | | 70.88 | .00 | BROWN VITON O RINGS |
| 10/22 | 04/21/22 | 21 | | 13834 | 2410 GAR BENNETT, LLC | | 60.29 | .00 | COMPRESSION COUPLING |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 34.60 | .00 | FEM ADAPTER |
| 10/22 | 04/21/22 | 21 | | 13831 | 5866 FASTENAL COMPANY | | 9.21 | .00 | 1 1/2" ADJDIE 1/4NPT |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 1.62 | .00 | LINE REPAIR |
| TOTAL | REPAIR/MAINT SUPPLIES | | | | | .00 | 1,146.01 | .00 | |
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 10969 -01 | 13821 | 1397 BSK ANALYTICAL L | | 21.00 | -21.00 | WATER LABS-SAMPLE TESTING |
| 10/22 | 04/21/22 | 21 | 10969 -01 | 13821 | 1397 BSK ANALYTICAL L | | 130.00 | -130.00 | WATER LABS-SAMPLE TESTING |
| 10/22 | 04/21/22 | 21 | 10969 -01 | 13821 | 1397 BSK ANALYTICAL L | | 130.00 | -130.00 | WATER LABS-SAMPLE TESTING |
| 10/22 | 04/21/22 | 21 | 10969 -01 | 13821 | 1397 BSK ANALYTICAL L | | 130.00 | -130.00 | WATER LABS-SAMPLE TESTING |
| 10/22 | 04/21/22 | 21 | 10969 -01 | 13821 | 1397 BSK ANALYTICAL L | | 130.00 | -130.00 | WATER LABS-SAMPLE TESTING |
| 10/22 | 04/21/22 | 21 | 10969 -01 | 13821 | 1397 BSK ANALYTICAL L | | 130.00 | -130.00 | WATER LABS-SAMPLE TESTING |
| 10/22 | 04/21/22 | 21 | 10969 -01 | 13821 | 1397 BSK ANALYTICAL L | | 152.00 | -152.00 | WATER LABS-SAMPLE TESTING |
| 10/22 | 04/21/22 | 21 | 10969 -01 | 13821 | 1397 BSK ANALYTICAL L | | 152.00 | -152.00 | WATER LABS-SAMPLE TESTING |
| 10/22 | 04/21/22 | 21 | 10969 -01 | 13821 | 1397 BSK ANALYTICAL L | | 152.00 | -152.00 | WATER LABS-SAMPLE TESTING |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 050 - WATER
BUDGET UNIT - 4250 - WATER

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4310 | PROFESSIONAL CONTRACT SVC (cont'd) | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 10969 -01 | 13821 | 1397 BSK ANALYTICAL L | | 152.00 | -152.00 | WATER LABS-SAMPLE TESTING |
| 10/22 | 04/21/22 | 21 | 10969 -01 | 13821 | 1397 BSK ANALYTICAL L | | 152.00 | -152.00 | WATER LABS-SAMPLE TESTING |
| 10/22 | 04/21/22 | 21 | 10969 -01 | 13821 | 1397 BSK ANALYTICAL L | | 4,046.50 | -4,046.50 | WATER LABS-SAMPLE TESTING |
| 10/22 | 04/21/22 | 21 | 11420 -01 | 13867 | 4033 US BANK | | 1,500.00 | -1,500.00 | WATER REVENUE BOND SERIES |
| 10/22 | 04/21/22 | 21 | 11428 -01 | 13863 | 6663 SUSP, INC | | 11,495.00 | -11,495.00 | LEMOORE CPO SERVICES |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 18,472.50 | -18,472.50 | |
| 4340 | UTILITIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13862 | 6266 SPARKLETTS | | 162.08 | .00 | WATER SERVICE |
| TOTAL | UTILITIES | | | | | .00 | 162.08 | .00 | |
| 4392 | LOAN INTEREST EXPENSE | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 10927 -02 | 13859 | 6388 PINNACLE PUBLIC | | 22,789.73 | -22,789.73 | INTEREST |
| TOTAL | LOAN INTEREST EXPENSE | | | | | .00 | 22,789.73 | -22,789.73 | |
| 4393 | SOLAR PRINCIPAL | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 10927 -01 | 13859 | 6388 PINNACLE PUBLIC | | 120,617.43 | -120,617.43 | PRINCIPLE |
| TOTAL | SOLAR PRINCIPAL | | | | | .00 | 120,617.43 | -120,617.43 | |
| 4398 | 2019 BOND PRINCIPAL EXP | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11421 -02 | 13867 | 4033 US BANK | | 150,000.00 | -150,000.00 | 2019 BOND DEBT SERVICE PR |
| TOTAL | 2019 BOND PRINCIPAL EXP | | | | | .00 | 150,000.00 | -150,000.00 | |
| 4399 | 2019 BOND INTEREST EXP | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11421 -01 | 13867 | 4033 US BANK | | 635,747.38 | -635,747.38 | 2019 BOND DEBIT SERVICE I |
| TOTAL | 2019 BOND INTEREST EXP | | | | | .00 | 635,747.38 | -635,747.38 | |
| TOTAL | WATER | | | | | .00 | 960,136.04 | -957,534.65 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 050 - WATER
BUDGET UNIT - 4251 - UTILITY OFFICE

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11015 -01 | 13837 | 5546 INFOSEND | | 1,445.48 | -1,445.48 | UTILITY BILLING STATEMENT |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 1,445.48 | -1,445.48 | |
| 4335 | POSTAGE & MAILING | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11015 -02 | 13837 | 5546 INFOSEND | | 3,004.87 | -3,004.87 | UTILITY BILLING STATEMENT |
| TOTAL | POSTAGE & MAILING | | | | | .00 | 3,004.87 | -3,004.87 | |
| 4340 | UTILITIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13862 | 6266 SPARKLETTS | | 21.60 | .00 | WATER SERVICE |
| TOTAL | UTILITIES | | | | | .00 | 21.60 | .00 | |
| TOTAL | UTILITY OFFICE | | | | | .00 | 4,471.95 | -4,450.35 | |
| TOTAL | WATER | | | | | .00 | 964,607.99 | -961,985.00 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 056 - REFUSE
BUDGET UNIT - 4256 - REFUSE

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4230 | REPAIR/MAINT SUPPLIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 10908 -01 | 13847 | 0304 LEMOORE HARDWARE | | 19.28 | -19.28 | OPERATING SUPPLIES |
| TOTAL | REPAIR/MAINT SUPPLIES | | | | | .00 | 19.28 | -19.28 | |
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13817 | 6724 84 RECYCLING | | 345.00 | .00 | TRUCKING SERVICES |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 345.00 | .00 | |
| 4320 | MEETINGS & DUES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13861 | 6759 SWANA | | 253.00 | .00 | MEMBER ID 1414631 |
| TOTAL | MEETINGS & DUES | | | | | .00 | 253.00 | .00 | |
| 4330 | PRINTING & PUBLICATIONS | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11434 -01 | 13837 | 5546 INFOSEND | | 788.21 | -788.21 | SPRING CLEAN UP COUPON |
| TOTAL | PRINTING & PUBLICATIONS | | | | | .00 | 788.21 | -788.21 | |
| TOTAL | REFUSE | | | | | .00 | 1,405.49 | -807.49 | |
| TOTAL | REFUSE | | | | | .00 | 1,405.49 | -807.49 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 060 - SEWER& STORM WTR DRAINAGE
BUDGET UNIT - 4260 - SEWER

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4220 | OPERATING SUPPLIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13831 | 5866 FASTENAL COMPANY | | 296.91 | .00 | GLOVES |
| 10/22 | 04/21/22 | 21 | | 13833 | 6751 FURTADO WELDING | | 498.71 | .00 | TRUCK CHEST ALUMINUM |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 20.76 | .00 | FOR HEAD WORKS |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 20.90 | .00 | TOOL BOX |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 14.56 | .00 | BATH TISSUE |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 14.99 | .00 | OD EXT SPRING |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 5.11 | .00 | ELEC TAPE |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 6.21 | .00 | TIGHT CONNECTOR |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 43.94 | .00 | RND BAST FILE |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 52.07 | .00 | OUT EXT CORD |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 31.16 | .00 | GALV PIP STRAP |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 25.50 | .00 | STAINLESS STL PAD |
| TOTAL | OPERATING SUPPLIES | | | | | .00 | 1,030.82 | .00 | |
| 4230 | REPAIR/MAINT SUPPLIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 24.65 | .00 | MANHOLE CONCRETE REPL |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 29.44 | .00 | PUTTY KNIFE |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 32.79 | .00 | REPAIR AT WWTP |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 62.16 | .00 | FOR REMOVING PAINT ON |
| 10/22 | 04/21/22 | 21 | | 13831 | 5866 FASTENAL COMPANY | | 42.95 | .00 | HEX DIES |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 10.27 | .00 | FOR HIGH SCHOOL |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 9.11 | .00 | NAIL SET |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 5.98 | .00 | HEADWORK NEW LIGHTS |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 4.91 | .00 | REPAIRED AT WWTP |
| 10/22 | 04/21/22 | 21 | | 13847 | 0304 LEMOORE HARDWARE | | 16.08 | .00 | THN BI METAL BLADE |
| TOTAL | REPAIR/MAINT SUPPLIES | | | | | .00 | 238.34 | .00 | |
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13840 | 0242 JORGENSEN COMPAN | | 60.00 | .00 | INSTRUMENT CALIBRATIO |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 60.00 | .00 | |
| 4340 | UTILITIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13857 | 0363 PG&E | | 11,982.69 | .00 | 02/17/22-03/20/22 |
| 10/22 | 04/21/22 | 21 | | 13862 | 6266 SPARKLETTS | | 72.72 | .00 | WATER SERVICE |
| TOTAL | UTILITIES | | | | | .00 | 12,055.41 | .00 | |
| 4350 | REPAIR/MAINT SERVICES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11415 -01 | 13834 | 2410 GAR BENNETT, LLC | | 670.02 | -670.02 | LABOR AND EQUIPMENT |
| TOTAL | REPAIR/MAINT SERVICES | | | | | .00 | 670.02 | -670.02 | |
| TOTAL | SEWER | | | | | .00 | 14,054.59 | -670.02 | |
| TOTAL | SEWER& STORM WTR DRAINAGE | | | | | .00 | 14,054.59 | -670.02 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 085 - PBIA
BUDGET UNIT - 4270 - PBIA

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13855 | 5563 RUSTY DEROUIN | | 300.00 | .00 | MARCH SERVICES |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 300.00 | .00 | |
| 4340 | UTILITIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13826 | 2320 CITY OF LEMOORE | | 56.36 | .00 | 02/24/22-03/01/22 |
| TOTAL | UTILITIES | | | | | .00 | 56.36 | .00 | |
| TOTAL | PBIA | | | | | .00 | 356.36 | .00 | |
| TOTAL | PBIA | | | | | .00 | 356.36 | .00 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 150 - RDA RETIREMENT OBLIG FUND
BUDGET UNIT - 4951 - RDA RETIREMENT OBLIG FUND

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11414 -01 | 13867 | 4033 US BANK | | 690.00 | -690.00 | 2011 BOND ADMIN FEES |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 690.00 | -690.00 | |
| TOTAL | RDA RETIREMENT OBLIG FUND | | | | | .00 | 690.00 | -690.00 | |
| TOTAL | RDA RETIREMENT OBLIG FUND | | | | | .00 | 690.00 | -690.00 | |

CITY OF LEMOORE
EXPENDITURE TRANSACTION ANALYSIS



SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 201 - LLMD ZONE 1
BUDGET UNIT - 4851 - LLMD ZONE 1 WESTFIELD

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11032 -01 | 13871 | 7238 WESTSCAPES | | 3,583.00 | -3,583.00 | LLMD 01 MONTHLY LANDSCAPE |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 3,583.00 | -3,583.00 | |
| 4340 | UTILITIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13856 | 0363 PG&E | | 76.33 | .00 | 02/22/22-03/22/22 |
| TOTAL | UTILITIES | | | | | .00 | 76.33 | .00 | |
| TOTAL | LLMD ZONE 1 WESTFIELD | | | | | .00 | 3,659.33 | -3,583.00 | |
| TOTAL | LLMD ZONE 1 | | | | | .00 | 3,659.33 | -3,583.00 | |

CITY OF LEMOORE
EXPENDITURE TRANSACTION ANALYSIS

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 203 - LLMD ZONE 3 SILVA ESTATES
BUDGET UNIT - 4853 - LLMD ZONE 3 SILVA ESTATES

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11031 -01 | 13871 | 7238 WESTSCAPES | | 452.00 | -452.00 | LLMD 03 MONTHLY LANDSCAPE |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 452.00 | -452.00 | |
| 4340 | UTILITIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13856 | 0363 PG&E | | 47.66 | .00 | 02/22/22-03/22/22 |
| TOTAL | UTILITIES | | | | | .00 | 47.66 | .00 | |
| TOTAL | LLMD ZONE 3 SILVA ESTATES | | | | | .00 | 499.66 | -452.00 | |
| TOTAL | LLMD ZONE 3 SILVA ESTATES | | | | | .00 | 499.66 | -452.00 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 205 - LLMD ZONE 5 WILDFLOWER
BUDGET UNIT - 4855 - LLMD ZONE 5 WILDFLOWER

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11030 -01 | 13871 | 7238 WESTSCAPES | | 75.00 | -75.00 | LLMD ZONE 05 MONTHLY LAND |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 75.00 | -75.00 | |
| TOTAL | LLMD ZONE 5 WILDFLOWER | | | | | .00 | 75.00 | -75.00 | |
| TOTAL | LLMD ZONE 5 WILDFLOWER | | | | | .00 | 75.00 | -75.00 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 206 - LLMD ZONE 6 CAPISTRANO
BUDGET UNIT - 4856 - LLMD ZONE 6 CAPISTRANO

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11029 -01 | 13871 | 7238 WESTSCAPES | | 81.00 | -81.00 | 50% LLMD 06 MONTHLY LANDS |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 81.00 | -81.00 | |
| 4340 | UTILITIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 4729057APR22 | 0363 PG&E | | .00 | .00 | 02/22/22-03/22/22 |
| TOTAL | UTILITIES | | | | | .00 | .00 | .00 | |
| TOTAL | LLMD ZONE 6 CAPISTRANO | | | | | .00 | 81.00 | -81.00 | |
| TOTAL | LLMD ZONE 6 CAPISTRANO | | | | | .00 | 81.00 | -81.00 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 207 - LLMD ZONE 7 SILVERADO
BUDGET UNIT - 4857 - LLMD ZONE 7 SILVERADO

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11028 -01 | 13871 | 7238 WESTSCAPES | | 291.00 | -291.00 | LLMD 07 MONTHLY LANDSCAPE |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 291.00 | -291.00 | |
| TOTAL | LLMD ZONE 7 SILVERADO | | | | | .00 | 291.00 | -291.00 | |
| TOTAL | LLMD ZONE 7 SILVERADO | | | | | .00 | 291.00 | -291.00 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 208A - LLMD ZONE 8 COUNTRY CLUB
BUDGET UNIT - 4858A - LLMD ZONE 8 COUNTRY CLUB

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11027 -01 | 13871 | 7238 WESTSCAPES | | 412.00 | -412.00 | LLMD 08A MONTHLY LANDSCAP |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 412.00 | -412.00 | |
| TOTAL | LLMD ZONE 8 COUNTRY CLUB | | | | | .00 | 412.00 | -412.00 | |
| TOTAL | LLMD ZONE 8 COUNTRY CLUB | | | | | .00 | 412.00 | -412.00 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 208B - LLMD ZONE 8B GREENS
BUDGET UNIT - 4858B - LLMD ZONE 8B GREENS

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11026 -01 | 13871 | 7238 WESTSCAPES | | 434.00 | -434.00 | LLMD 08B MONTHLY LANDSCAP |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 434.00 | -434.00 | |
| 4340 | UTILITIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13856 | 0363 PG&E | | 9.53 | .00 | 02/22/22-03/22/22 |
| TOTAL | UTILITIES | | | | | .00 | 9.53 | .00 | |
| TOTAL | LLMD ZONE 8B GREENS | | | | | .00 | 443.53 | -434.00 | |
| TOTAL | LLMD ZONE 8B GREENS | | | | | .00 | 443.53 | -434.00 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 209 - LLMD ZONE 9 LA DANTE ROSE
BUDGET UNIT - 4859 - LLMD ZONE 9 LA DANTE ROSE

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11025 -01 | 13871 | 7238 WESTSCAPES | | 295.00 | -295.00 | LLMD 09 MONTHLY LANDSCAPE |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 295.00 | -295.00 | |
| TOTAL | LLMD ZONE 9 LA DANTE ROSE | | | | | .00 | 295.00 | -295.00 | |
| TOTAL | LLMD ZONE 9 LA DANTE ROSE | | | | | .00 | 295.00 | -295.00 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 210 - LLMD ZONE 10 AVALON
BUDGET UNIT - 4860 - LLMD ZONE 10 AVALON

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11024 -01 | 13871 | 7238 WESTSCAPES | | 817.00 | -817.00 | LLMD 10 MONTHLY LANDSCAPE |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 817.00 | -817.00 | |
| 4340 | UTILITIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13856 | 0363 PG&E | | 19.06 | .00 | 02/22/22-03/22/22 |
| TOTAL | UTILITIES | | | | | .00 | 19.06 | .00 | |
| TOTAL | LLMD ZONE 10 AVALON | | | | | .00 | 836.06 | -817.00 | |
| TOTAL | LLMD ZONE 10 AVALON | | | | | .00 | 836.06 | -817.00 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 211 - LLMD ZONE 11 SELF HELP EN
BUDGET UNIT - 4861 - LLMD ZONE 11 SELF HELP EN

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11023 -01 | 13871 | 7238 WESTSCAPES | | 89.50 | -89.50 | 50% LLMD 11 MONTHLY LANDS |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 89.50 | -89.50 | |
| TOTAL | LLMD ZONE 11 SELF HELP EN | | | | | .00 | 89.50 | -89.50 | |
| TOTAL | LLMD ZONE 11 SELF HELP EN | | | | | .00 | 89.50 | -89.50 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 212 - LLMD ZONE 12 SUMMERWIND
BUDGET UNIT - 4862 - LLMD ZONE 12 SUMMERWIND

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11022 -01 | 13871 | 7238 WESTSCAPES | | 1,778.00 | -1,778.00 | LLMD 12 MONTHLY LANDSCAPE |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 1,778.00 | -1,778.00 | |
| 4340 | UTILITIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13856 | 0363 PG&E | | 19.07 | .00 | 02/22/22-03/22/22 |
| TOTAL | UTILITIES | | | | | .00 | 19.07 | .00 | |
| TOTAL | LLMD ZONE 12 SUMMERWIND | | | | | .00 | 1,797.07 | -1,778.00 | |
| TOTAL | LLMD ZONE 12 SUMMERWIND | | | | | .00 | 1,797.07 | -1,778.00 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 213 - LLMD ZONE 13 CORNERSTONE
BUDGET UNIT - 4863 - LLMD ZONE 13 CORNERSTONE

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11021 | -01 13871 | 7238 WESTSCAPES | | 252.00 | -252.00 | LLMD 13 MONTHLY LANDSCAPE |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 252.00 | -252.00 | |
| TOTAL | LLMD ZONE 13 CORNERSTONE | | | | | .00 | 252.00 | -252.00 | |
| TOTAL | LLMD ZONE 13 CORNERSTONE | | | | | .00 | 252.00 | -252.00 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 251 - PFMD ZONE 1
BUDGET UNIT - 4871 - PFMD ZONE 1

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11020 -01 | 13871 | 7238 WESTSCAPES | | 599.00 | -599.00 | PFMD 01 MONTHLY LANDSCAPE |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 599.00 | -599.00 | |
| 4340 | UTILITIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13856 | 0363 PG&E | | 39.43 | .00 | 02/22/22-03/22/22 |
| TOTAL | UTILITIES | | | | | .00 | 39.43 | .00 | |
| TOTAL | PFMD ZONE 1 | | | | | .00 | 638.43 | -599.00 | |
| TOTAL | PFMD ZONE 1 | | | | | .00 | 638.43 | -599.00 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 252 - PFMD ZONE 2
BUDGET UNIT - 4872 - PFMD ZONE 2

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11036 -01 | 13871 | 7238 WESTSCAPES | | 1,771.00 | -1,771.00 | PFMD 02 MONTHLY LANDSCAPE |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 1,771.00 | -1,771.00 | |
| 4340 | UTILITIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13856 | 0363 PG&E | | 49.71 | .00 | 02/22/22-03/22/22 |
| TOTAL | UTILITIES | | | | | .00 | 49.71 | .00 | |
| 4350 | REPAIR/MAINT SERVICES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13871 | 7238 WESTSCAPES | | 299.25 | .00 | T/M REPAIR TO WATER |
| 10/22 | 04/21/22 | 21 | 11433 -01 | 13871 | 7238 WESTSCAPES | | 1,080.49 | -1,080.49 | SPRINKLER REPAIRS |
| TOTAL | REPAIR/MAINT SERVICES | | | | | .00 | 1,379.74 | -1,080.49 | |
| TOTAL | PFMD ZONE 2 | | | | | .00 | 3,200.45 | -2,851.49 | |
| TOTAL | PFMD ZONE 2 | | | | | .00 | 3,200.45 | -2,851.49 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 253 - PFMD ZONE 3
BUDGET UNIT - 4873 - PFMD ZONE 3

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11037 -01 | 13871 | 7238 WESTSCAPES | | 525.00 | -525.00 | PFMD 03 MONTHLY LANDSCAPE |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 525.00 | -525.00 | |
| 4340 | UTILITIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 4729057APR22 | 0363 PG&E | | .00 | .00 | 02/22/22-03/22/22 |
| TOTAL | UTILITIES | | | | | .00 | .00 | .00 | |
| 4350 | REPAIR/MAINT SERVICES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13871 | 7238 WESTSCAPES | | 279.14 | .00 | LLMD QUADRANT ONE 3 |
| TOTAL | REPAIR/MAINT SERVICES | | | | | .00 | 279.14 | .00 | |
| TOTAL | PFMD ZONE 3 | | | | | .00 | 804.14 | -525.00 | |
| TOTAL | PFMD ZONE 3 | | | | | .00 | 804.14 | -525.00 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 254 - PFMD ZONE 4
BUDGET UNIT - 4874 - PFMD ZONE 4

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11038 -01 | 13871 | 7238 WESTSCAPES | | 439.00 | -439.00 | PFMD 04 MONTHLY LANDSCAPE |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 439.00 | -439.00 | |
| 4340 | UTILITIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13856 | 0363 PG&E | | 38.67 | .00 | 02/22/22-03/22/22 |
| TOTAL | UTILITIES | | | | | .00 | 38.67 | .00 | |
| TOTAL | PFMD ZONE 4 | | | | | .00 | 477.67 | -439.00 | |
| TOTAL | PFMD ZONE 4 | | | | | .00 | 477.67 | -439.00 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 255 - PFMD ZONE 5
BUDGET UNIT - 4875 - PFMD ZONE 5

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11035 -01 | 13871 | 7238 WESTSCAPES | | 699.00 | -699.00 | PFMD 05 MONTHLY LANDSCAPE |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 699.00 | -699.00 | |
| 4340 | UTILITIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13856 | 0363 PG&E | | 101.33 | .00 | 02/22/22-03/22/22 |
| TOTAL | UTILITIES | | | | | .00 | 101.33 | .00 | |
| 4350 | REPAIR/MAINT SERVICES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13871 | 7238 WESTSCAPES | | 168.00 | .00 | TROUBLESHOOT LEAK |
| TOTAL | REPAIR/MAINT SERVICES | | | | | .00 | 168.00 | .00 | |
| TOTAL | PFMD ZONE 5 | | | | | .00 | 968.33 | -699.00 | |
| TOTAL | PFMD ZONE 5 | | | | | .00 | 968.33 | -699.00 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 256 - PFMD ZONE 6
BUDGET UNIT - 4876 - PFMD ZONE 6

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11253 -01 | 13871 | 7238 WESTSCAPES | | 398.00 | -398.00 | PFMD 06 MONTHLY LANDSCAPE |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 398.00 | -398.00 | |
| TOTAL | PFMD ZONE 6 | | | | | .00 | 398.00 | -398.00 | |
| TOTAL | PFMD ZONE 6 | | | | | .00 | 398.00 | -398.00 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 257 - PFMD ZONE 7
BUDGET UNIT - 4877 - PFMD ZONE 7

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11029 -02 | 13871 | 7238 WESTSCAPES | | 81.00 | -81.00 | 50% PFMD 07 MONTHLY LANDS |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 81.00 | -81.00 | |
| TOTAL | PFMD ZONE 7 | | | | | .00 | 81.00 | -81.00 | |
| TOTAL | PFMD ZONE 7 | | | | | .00 | 81.00 | -81.00 | |

CITY OF LEMOORE
EXPENDITURE TRANSACTION ANALYSIS



SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 258 - PFMD ZONE 8
BUDGET UNIT - 4878 - PFMD ZONE 8

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11033 -01 | 13871 | 7238 WESTSCAPES | | 557.00 | -557.00 | PFMD 01 MONTHLY LANDSCAPE |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 557.00 | -557.00 | |
| TOTAL | PFMD ZONE 8 | | | | | .00 | 557.00 | -557.00 | |
| TOTAL | PFMD ZONE 8 | | | | | .00 | 557.00 | -557.00 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 259 - PFMD ZONE 9
BUDGET UNIT - 4879 - PFMD ZONE 9

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11034 -01 | 13871 | 7238 WESTSCAPES | | 579.00 | -579.00 | PFMD 09 MONTHLY LANDSCAPE |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 579.00 | -579.00 | |
| 4340 | UTILITIES | | | | | | | | |
| 10/22 | 04/21/22 | 21 | | 13856 | 0363 PG&E | | 9.81 | .00 | 02/22/22-03/22/22 |
| TOTAL | UTILITIES | | | | | .00 | 9.81 | .00 | |
| TOTAL | PFMD ZONE 9 | | | | | .00 | 588.81 | -579.00 | |
| TOTAL | PFMD ZONE 9 | | | | | .00 | 588.81 | -579.00 | |

SELECTION CRITERIA: transact.yr='22' and transact.fund between '001' and '800' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 260 - PFMD ZONE 10
BUDGET UNIT - 4880 - PFMD ZONE 10

| ACCOUNT | DATE | T/C | ENCUMBRANC | REFERENCE | VENDOR | BUDGET | EXPENDITURES | ENCUMBRANCES | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| 4310 | PROFESSIONAL CONTRACT SVC | | | | | | | | |
| 10/22 | 04/21/22 | 21 | 11023 -02 | 13871 | 7238 WESTSCAPES | | 89.50 | -89.50 | 50% PFMD 10 MONTHLY LANDS |
| TOTAL | PROFESSIONAL CONTRACT SVC | | | | | .00 | 89.50 | -89.50 | |
| TOTAL | PFMD ZONE 10 | | | | | .00 | 89.50 | -89.50 | |
| TOTAL | PFMD ZONE 10 | | | | | .00 | 89.50 | -89.50 | |
| TOTAL REPORT | | | | | | .00 | 1,126,259.54 | -1,093,720.01 | |

CITY OF LEMOORE
GENERAL LEDGER TRANSACTION ANALYSIS



SELECTION CRITERIA: account.acct between '2000' and '2999'AND transact.yr='22' and transact.batch='VM042222'
ACCOUNTING PERIOD: 10/22

FUND - 001 - GENERAL FUND

| ACCOUNT | DATE | T/C | REFERENCE | VENDOR/PAYER | DEBIT | CREDIT | DESCRIPTION |
|---|---|---|---|---|---|---|---|
| 2020 | ACCOUNTS PAYABLE | | | | | | |
| 10/22 | 04/21/22 | 21 | 13824 | T3231 ROXANNE CANO | | 250.00 | REFUND VET HALL |
| TOTAL | ACCOUNTS PAYABLE | | | | .00 | 250.00 | |
| 2300 | CUSTOMER DEPOSITS | | | | | | |
| 10/22 | 04/21/22 | 21 | 13824 | T3231 ROXANNE CANO | 250.00 | | REFUND VET HALL |
| TOTAL | CUSTOMER DEPOSITS | | | | 250.00 | .00 | |
| TOTAL | GENERAL FUND | | | | 250.00 | 250.00 | |
| TOTAL REPORT | | | | | 250.00 | 250.00 | |